United Nations A/66/205

General Assembly

Distr.: General
25 July 2011

Original: English

Sixty-sixth session
Item 22 (b) of the provisional agenda*
Groups of countries in special situations: specific actions related to the particular needs and problems of landlocked developing countries: outcome of the International Ministerial Conference of Landlocked and Transit Developing Countries and Donor Countries and International Financial and Development Institutions on Transit Transport Cooperation

Implementation of the Almaty Programme of Action: Addressing the Special Needs of Landlocked Developing Countries within a New Global Framework for Transit Transport Cooperation for Landlocked and Transit Developing Countries

Report of the Secretary-General

Summary

The present report is submitted pursuant to General Assembly resolution 65/172, in which the Secretary-General was requested to submit to the sixty-sixth session an analytical report on the implementation of the Almaty Programme of Action: Addressing the Special Needs of Landlocked Developing Countries within a New Global Framework for Transit Transport Cooperation for Landlocked and Transit Developing Countries and the Almaty Declaration on the midterm review. The report provides an update on the progress made in the implementation of the Almaty Programme of Action by the landlocked countries and their development partners and showcases the efforts being made by the United Nations system and other international organizations. The report identifies the major challenges encountered and suggests recommendations to accelerate implementation of the Programme.

* A/66/150.

11-43610 (E) 220811

Please recycle

I. Introduction

1. The Almaty Programme of Action: Addressing the Special Needs of Landlocked Developing Countries within a New Global Framework for Transit Transport Cooperation for Landlocked and Transit Developing Countries was adopted in 2003 as the United Nations response to the growing recognition by the international community of the special development needs and challenges faced by the 31 landlocked developing countries. Lack of territorial access to the sea and their remoteness and isolation from world markets hinders the efforts of landlocked developing countries to generate and sustain economic growth and the achievement of the Millennium Development Goals.

II. Overview of economic and social conditions in the landlocked developing countries

2. The landlocked developing countries as a group experienced a decrease in economic growth from 5.8 per cent in 2008 to 3.6 per cent in 2009 (see annex, table 1) owing to the global financial and economic crisis. According to the *World Economic Situation and Prospects, 2011*, the Department of Economic and Social Affairs of the Secretariat estimates that economic growth for the group was around 5.8 in 2010, indicating that the economies of the landlocked developing countries are on their way to recovery.

3. After experiencing high inflation rates in 2008, inflation decelerated in 2009 across most of the landlocked developing countries owing to weakened domestic demand and reduced commodity prices especially for energy and food. Inflation rates stayed at low levels or decelerated in 2010 in most of the African and South Asian landlocked developing countries.

4. In 2009, exports and imports decreased in all the landlocked developing countries owing to the global financial and economic crisis. Landlocked developing countries as a group experienced a decrease in inflows of foreign direct investment in 2009. Net transfers of official development assistance flows from traditional donors to landlocked developing countries remained positive, increasing from $22.6 billion in 2008 to $24.8 billion in 2009. External debt as a percentage of the gross national income rose from 43 per cent in 2008, to 48 per cent in 2009.

5. Remittances fell in 2009. Remittances are a major source of capital in some landlocked developing countries, notably, Kyrgyzstan, Lesotho, Nepal and Tajikistan, where they account for over 20 per cent of gross domestic product (GDP).

6. Prior to the financial and economic crisis, landlocked developing countries had made progress on some aspects of social development: half of the 25 landlocked developing countries for which data exists had reduced the population living in extreme poverty by more than 20 per cent over the period 2002-2008 (see annex, table 8). The crisis increased the number of people in extreme poverty since it led to job and income losses, especially in key export industries. Joblessness among youth is also a major challenge in landlocked developing countries. It is important that they adopt policies to foster employment generation and allocate adequate resources for building effective social protection systems.

7. The percentage of the population that lives in hunger in landlocked developing countries is still relatively high: in half of them more than 20 per cent of the population was undernourished during the period 2005-2007. The geography of landlocked developing countries makes them more vulnerable to rising food prices because of high transport charges. According to the Food and Agricultural Organization of the United Nations (FAO) in March 2011, of the 29 countries requiring external assistance owing to critical problems related to food insecurity, 12 were landlocked developing countries.

8. Half of the landlocked developing countries experienced deforestation between 2000 and 2010, with five countries experiencing a decrease in their forest coverage of more than 15 per cent. Climate change continues to be a major challenge and has exacerbated deforestation, desertification and loss of biodiversity and has had a negative impact on the transport infrastructure. Landlocked developing countries are also vulnerable to natural disasters. For example, the Mongolian economy was affected by *zud* (severe winter) during 2009-2010, resulting in the loss of over 10 million heads of domestic animals. In 2010, the Sahel region, including Mali, Burkina Faso, Chad, Niger and Ethiopia, was affected by a drought.

9. Overall, after eight years of implementing the Almaty Programme of Action, landlocked developing countries have made some progress towards achieving the Millennium Development Goals, especially primary school enrolment, gender parity in primary education and women's representation in national parliaments; however, achieving food security, eradicating poverty and reducing child and maternal mortality remain major social development challenges. There is also a need to address the disparities caused by rural and urban location, income and gender. The global financial and economic crisis caused serious setbacks. Strengthened international support to landlocked developing countries through official development assistance is critical for enabling stepped-up efforts to achieve the Goals.

10. Landlocked developing countries continue to face constraints in participating in international trade owing to lack of access to the sea and remoteness from major markets, inadequate transit facilities, cumbersome customs and border crossing procedures, costly bank transactions and other costly services and operations. Such constraints result in high transport and trade transaction costs.

11. In order to determine the extent to which landlocked developing countries are affected by transport and trade transaction costs, the Office of the High Representative for the Least Developed Countries, Landlocked Developing Countries and Small Island Developing States made an attempt to estimate those costs based on the balance of payments data of the International Monetary Fund (IMF). The Office calculated the total freight charges in the balance of payments (which comprise all import and export freight charges paid to enterprises abroad or received by national enterprises from abroad) as a ratio of the total value of imports and exports (see annex, table 4). The data shows that landlocked developing countries in fact face high costs since the rate of freight charges to total value of exports and imports in 2009 was high, in particular for landlocked Africa where it was as high as 21.4 in one country. Landlocked developing countries as a group have a higher proportion of freight charges to total value of exports and imports: 45 per cent more than the group rate for transit developing countries. This clearly shows that landlocked developing countries are paying higher transport and trade costs — resources that could be invested in building their productive capacities.

12. The data is further supported by information contained in the World Bank report *Doing Business 2011*, which indicates that apart from 10 countries ranking below 100 (Armenia, Azerbaijan, Botswana, Kazakhstan, Kyrgyzstan, Mongolia, Republic of Moldova, Rwanda, the former Yugoslav Republic of Macedonia and Zambia), 20 of the landlocked developing countries for which there is data rank 104 and 183, out of a total of 183 countries in the world, partly because of the high costs related to importing and exporting.

III. Priorities

A. Fundamental transit policy issues

13. International conventions and agreements[1] provide frameworks for harmonization and simplification of transit formalities and procedures, and their effective implementation can significantly support access by landlocked developing countries to the sea. Ratification of the conventions has been slow (see table 1 below). Since the midterm review of the Almaty Programme of Action, very few landlocked developing countries, namely, Kazakhstan, Burkina Faso, Republic of Moldova and the Lao People's Democratic Republic, have ratified and acceded to international transport agreements.

Table 1
Status of accession by landlocked developing countries to the United Nations conventions on transport[a]

Convention	*Number of landlocked developing countries that are a contracting party to the convention (out of a total of 31)*
Convention on Road Traffic (1968)	13
Convention on Road Signs and Signals (1968)	8
Customs Convention on the International Transport of Goods Under Cover of TIR Carnets (1975)	11
Customs Convention on the Temporary Importation of Commercial Road Vehicles (1956)	5
Customs Convention on Containers (1972)	6
International Convention on the Harmonization of Frontier Controls of Goods (1982)	10
Convention on the Contract for the International Carriage of Goods by Road (1956)	10

Source: www.unece.org/trans/conventn/legalinst.html.

[a] In its resolution 48/11 of 1992, the Economic and Social Commission for Asia and the Pacific recommended that countries in the region consider acceding to the seven conventions included in the table.

[1] Under the auspices of the Economic Commission for Europe, there are 57 international conventions, agreements and protocols that provide frameworks for harmonization and simplification of the formalities and procedures of international transport and transit.

14. At the regional and subregional levels, substantial progress has been made in developing agreements where landlocked developing countries and their neighbouring countries are pursuing harmonization of transport and transit policies, laws, procedures and practices with transit countries. Asia has made substantial progress in developing and implementing the Intergovernmental Agreement on the Asian Highway Network and the Intergovernmental Agreement on the Trans-Asian Railway Network. A number of regional as well as subregional agreements have been reached in Asia.

15. In Africa, progress is being made towards developing a framework for harmonizing the norms and standards of the trans-African highway network at the regional level. At the subregional level, member States of the regional economic communities have entered into various agreements that promote supportive transport, transit and trade policies. The communities have also made progress in harmonizing standards and policies by entering into common arrangements. For example, the tripartite taskforce established between the Common Market for Eastern and Southern Africa (COMESA), the East African Community (EAC) and the South African Development Community (SADC) has led to the harmonization of their transport, energy, information and communications technology, and water policies and regulation, as well as physical infrastructure development. In West Africa, the Economic Community of West African States (ECOWAS) and the West African Economic and Monetary Union (UEMOA) are also harmonizing their transit facilitation programmes.

16. In South America, the landlocked developing countries are part of the Common Market of the South (MERCOSUR) and the Andean Community and their related agreements on transit transport and trade.

17. While there is some progress in the establishment of regional and subregional agreements that could provide a basis for simplification and harmonization of formalities and procedures, many agreements are not being fully implemented. Their effective implementation is important for landlocked developing countries, which would benefit from improved transit measures.

18. At the national level, some landlocked developing countries have strengthened their national policies to promote trade and transport facilitation, infrastructure development and maintenance. They have also undertaken initiatives to strengthen and establish institutional mechanisms for coordinating work on national transit transport facilitation. For example, the member countries of the Association of Southeast Asian Nations (ASEAN) and Greater Mekong subregion have established national trade and transport facilitation bodies as part of the obligations under regional agreements or independently on their own. These bodies have promoted effective coordination and cooperation among all the relevant agencies responsible for international trade and transport facilitation. Challenges to their effective functioning include insufficient financial resources, inadequate recognition of their roles and functions, and incomplete representation of key stakeholders.

19. Continued progress is being made in streamlining administrative procedures and simplifying border control procedures. One-stop border controls have been established on several adjacent border posts along the transport corridors in the COMESA, EAC and, most recently, ECOWAS subregions. The first one-stop border post established on the Zambia-Zimbabwe border in December 2009 helped to

simplify border control and procedures and to reduce the time at the border for commercial trucks, from 5 days to less than 24 hours.

20. In South America, the MERCOSUR countries in the Recife Agreement on integrated controls agreed to apply integrated controls on 16 border points. Paraguay has established an integrated control at its border with Brazil, while work on the border post with the Plurinational State of Bolivia is now at an advanced stage.

21. In South-East Asia, the Greater Mekong Subregional Cross-Border Transport Agreement includes implementation of single-stop inspection and single-window inspection points that aim to produce maximum efficiencies at the border. Joint processing initiatives also form part of the multi-donor Central Asia Regional Economic Cooperation (CAREC) programme managed by the Asian Development Bank (ADB). One-stop border posts have brought benefits to landlocked developing countries and are an effective initiative that should be replicated.

22. In Africa, the COMESA subregion has established a yellow card system, which is a motor vehicle insurance scheme that is valid in all participating countries and also facilitates the cross-border movement of vehicles between COMESA member countries. The card has helped to reduce delays at the border since transporters and motorists do not have to buy insurance coverage at each border post.

B. Infrastructure development and maintenance

23. Roads are the leading mode of transport for most landlocked developing countries, especially in Africa, where they account for about 90 per cent of intra-African trade. However, the percentage of paved roads remains low, with only nine landlocked developing countries having over 50 per cent of their roads paved and eight countries having between 20 and 49 per cent (see annex, table 5). At the national level, some countries have set up independent sources of funding for road maintenance, based on road-user charges, fuel levies or budget allocations. A total of 27 African countries have established road funds. Some landlocked developing countries in other regions have functional road funds supporting road maintenance. For example, the Republic of Moldova recently made amendments to its Road Fund Law of February 1996 in order to increase funding for the maintenance and restoration of roads.

24. Some countries have created road agencies, independent from line ministries, with the prime responsibility for assigning outside contracts for public works activities. A World Bank study found that countries with a road fund and higher fuel levies devoted a greater share of their spending to maintenance and had experienced reduced volatility of sector spending relative to traditional budget allocations.[2]

25. At the regional level, progress in Asia has been made in upgrading 22,263 km (15.8 per cent) of the Asian highway road network, including: (a) reconstruction of AH5 (Baku-Alat-Kazak-Red Bridge), and AH8 (Baku-Guba-Samur and Alat-Astara) in Azerbaijan; (b) construction of AH3, AH4 and AH32 and a further plan to upgrade AH3 to class I standards in Mongolia; (c) progress in the construction of two bridges along the AH3 in Chiang Kong-Houayxay, and along the AH15 in

[2] Ken Gwilliam and others, *The Burden of Maintenance: Roads in Sub-Saharan Africa* (Washington, D.C., The World Bank, 2008).

Thakhek-Nakhon Phanom, between the Lao People's Democratic Republic and Thailand; (d) planned reconstruction of AH82 (Yerevan-Ashtarak section) in Armenia; and (e) reconstruction of AH82 from the Islamic Republic of Iran to the Armenian and Georgian border. According to estimates done by the Economic and Social Commission for Asia and the Pacific (ESCAP) and Asian member States in 2006, a consolidated list of 121 priority investment projects in 25 member States indicated that about $25 billion was being invested or committed for the development of various sections of Asian highway routes and that there had been a shortfall of $18 billion in the funds required to upgrade and improve about 26,000 kms of the Asian highway network.

26. The Initiative for the Integration of Regional Infrastructure in South America has coordinated the development of transport, energy and telecommunications infrastructure in the region. The Initiative has been in the process of implementing a total of 524 projects requiring a total investment of $54.61 billion.[3] By mid-2010, the Initiative had implemented 44 per cent of its infrastructure projects.

27. The African Union launched the Programme for Infrastructure Development in Africa in 2010, which aims to bring together various regional and continental infrastructure initiatives on road and railway transport, information and communications technology and energy and which is led by the African Development Bank (AfDB). The main objective of the programme is to coordinate the efforts and use of resources for infrastructure development. The trans-African highway that plays a crucial role in maintaining the economies of the landlocked countries of Africa still has missing links that require substantial resources for their completion. Major projects to improve the road network are ongoing in a number of countries and different regional economic communities in Africa.

28. Although some progress is being made in developing and maintaining road infrastructure, outstanding challenges include inadequate resources for road funds, overloading of vehicles and resource gaps for road infrastructure development.

29. Railways remain underutilized forms of transport for landlocked developing countries, with only nine landlocked developing countries having 1,000 or more kms of railways for freight service. The total length of the trans-Asian railway network of 114,000 kms has about 8,000 kms of missing links (7 per cent). Some progress has been made in the planning and construction of missing links in Azerbaijan, the Lao People's Democratic Republic, Mongolia and Uzbekistan.

30. In Africa, the railway network of 74,775 kms has very low density and is mostly in northern Africa and southern Africa. An infrastructure development study undertaken by the New Partnership for Africa's Development and the African Union in 2006 estimated 26,362 kms of missing links. Not much progress has been recorded in that subsector but some rail projects are likely to be revitalized in western, central, eastern and southern Africa.

31. Progress has been made in respect of railway integration in South America. In May 2010, Brazil and Paraguay formalized a project funded by the Brazilian Development Bank to link Paraguay's railway system with the railroad linking

[3] Latin American and Caribbean Economic System, *Physical Infrastructure for Integration in Latin America and the Caribbean* (2011).

Paranagua, Brazil, and the Antofagasta, Chile, in effect creating an inter-oceanic railway corridor.

32. The major challenges facing development of the railway networks include limited resources to invest in the missing links and differences in railway gauges, resulting in frequent loading and off-loading of goods and increased delays and transport costs.

33. There has been progress in the establishment of dry ports. Dry ports provide similar functions to those of sea ports and support the development of intermodal corridors. In Asia, for example, Mongolia plans to develop four dry ports along the trans-Asian railway, Nepal has four dry ports, and there are plans to develop dry ports in other countries, including Kazakhstan and Uzbekistan. In Africa, dry ports have been established in Burkina Faso, Ethiopia, Niger and Uganda, and in South America, a dry port was established in Paraguay.

34. Landlocked developing countries have made remarkable progress in improving telecommunication infrastructure, particularly cellular phones and Internet connectivity. As a group, they recorded an increase of 25 and 37 per cent in cellular phones and Internet usage, respectively, from 2008 to 2009 (see annex, table 6). This has been made possible through liberalization of the telecommunication sector and the resulting increased private sector investment.

35. Energy infrastructure is vital for reducing delays in transit time for landlocked developing country consignments. However, it is still insufficient and unreliable, for example, in the five landlocked developing countries that are net importers of energy. Energy infrastructure financing needs at the national and regional levels are relatively high, requiring the input of all sources of resources, including domestic, bilateral, regional and multilateral, and increased partnership with the private sector.

36. Research by the World Bank[4] indicates that challenges with regard to transport infrastructure are not only limited to physical deficits in infrastructure but also to a lack of adequate soft infrastructure, mainly the logistics services markets needed to improve services along transport and transit corridors. Many landlocked developing countries have undertaken initiatives to put in place policies to guide and support the development of competitive freight forwarding and multimodal transport and logistics services. However, in many countries, freight forwarders and logistics services providers are small in size and the industry is fragmented.

37. Participation of the private sector varies enormously across the subsectors: it is highest in mobile telephony, followed by transport, with the contracting of road maintenance and concessions in container terminals and railroads. In the energy sector, State-owned utilities are still prevalent although there is interest in privatization of power generation and distribution. Landlocked developing countries should consider promoting active and effective cooperation with the private sector through fostering an enabling policy environment.

[4] Jean-François Arvis and others, *Connecting Landlocked Developing Countries to Markets: Trade Corridors in the 21st Century* (World Bank, 2011).

C. International trade and trade facilitation

38. Despite some progress made in enhanced integration of landlocked developing countries into the global trading system, only 22 of the 31 landlocked developing countries are members of the World Trade Organization (WTO). All other countries, except one, are WTO observers and are in the process of accession negotiation. Along with domestic institutional reform, efforts are needed at the multilateral level to support and facilitate development-friendly conditions for their accession.

39. Although the group of landlocked developing countries had experienced enhanced export performance, with the value of merchandise exports growing in nominal terms from $33 billion in 2003 to $153 billion in 2008, their exports fell by 42 per cent from 2008 to 2009 (see annex, table 4). The proportion of merchandise exports of landlocked developing countries to the total world exports has remained below 1 per cent. Although their share of world exports increased from 0.45 per cent in 2003 to 0.96 per cent in 2008, it fell to 0.75 in 2009. On the contrary, the share of transit developing countries has increased consistently, from 13 per cent in 2003 to 18 per cent in 2009.

40. In 2009, the merchandise imports of landlocked developing countries decreased by 16.5 per cent as a result of the global financial and economic crisis. IMF estimates show that in 2010 imports had recovered in 21 of the landlocked developing countries. Landlocked developing countries have increasingly been entering into regional preferential trade agreements resulting in reduced average tariffs achieved through unilateral measures and implementation of regional integration protocols. Eleven Asian landlocked developing countries are party to more than 40 trade arrangements in force and are engaged in negotiating further agreements at the regional level. In Africa, trade agreements exist for 13 subregional groupings. Three regional economic communities, COMESA, SADC and EAC are moving towards achieving a common-market status. Economic partnership agreements negotiations between the European Union and the African regional economic communities are progressing slowly. In South America, regional integration has been further deepened through the establishment of the Union of South American Nations, an intergovernmental union integrating the regional agreements in the region (MERCOSUR and the Andean Community of Nations).

41. However, despite numerous preferential trade agreements at the regional level, intraregional trade is not growing fast. In 2009, intra-MERCOSUR and intra-Andean Community of Nations exports were 8 per cent and 15 per cent of the total exports for the region, respectively. In Africa, intra-SADC, intra-COMESA, and intra-ECOWAS average exports between 2000 and 2007 were 12 per cent, 9 per cent and 13 per cent respectively.[5] In order to increase intraregional trade, it is essential to improve the regional infrastructure — transport, power and communication; effectively implement regional trade agreements; enhance harmonization of the regional regulatory framework in order to boost private sector activity; and improve trade and transit facilitation in order to reduce logistics costs.

42. Landlocked developing countries have continued to undertake trade facilitation initiatives. However, when compared to coastal countries, landlocked developing countries have a lower Logistics Performance Index (see table 2 below).

[5] ECA, "Progress in intra-African trade" (Addis Ababa, 2011).

Low Logistics Performance Index indicates significant hindrances to connecting their domestic economies into global markets due to longer time for customs clearance, low-quality trade- and transport-related infrastructure, inefficient and uncompetitive logistics services, cumbersome border crossing and customs procedures, difficulty in tracking and tracing consignment and unpredictable delivery time. It is important that continued work be done to improve trade facilitation.

Table 2
Regions with poorly performing landlocked developing countries based on Logistics Performance Index

	Sub-Saharan Africa		*South Asia*	
Background data	*Landlocked*	*Coastal*	*Landlocked*	*Coastal*
Overall Logistics Performance Index	2.22	2.43	1.84	2.64
Selected Logistics Performance Index components				
Logistics competence	2.21	2.45	1.84	2.69
Infrastructure	1.97	2.11	1.61	2.41
Customs and trade processes	2.10	2.30	1.69	2.34
Logistics Performance Index input data				
Customs clearance (days)	3.2	4.7	2.6	2.2
Physical inspection (per cent) (higher is worse)	62	42	56	27

Source: Jean-François Arvis and others, *The Cost of Being Landlocked* (Washington, D.C., The World Bank, 2010).

43. The WTO negotiations on trade facilitation aim to expedite the movement, release and clearance of goods, including goods in transit, enhance technical assistance and support for capacity-building on trade facilitation. According to the April 2011 draft consolidated negotiating text of the WTO Negotiating Group on Trade Facilitation,[6] the negotiations seek to improve relevant aspects of article V on freedom of transit, article VIII on fees and formalities connected with importation and exportation, and article X on publication and administration of trade regulations of the GATT 1994 and aspects related to Special and Differential Treatment.

D. International support measures

44. Since the adoption of the Almaty Programme, flows of official development assistance from traditional donors have increased from about $12 billion in 2003 to $18.9 billion in 2007 and to $24.8 billion in 2009. This reflects an increase of more than 10 per cent annually since 2003. However, two countries dominate the receipts: Afghanistan and Ethiopia, which accounted for 24 per cent and 15 per cent of total receipts in 2009, respectively. Official development assistance remains the main

[6] See http://www.wto.org/english/tratop_e/dda_e/chair_texts11_e/chair_texts11_e.htm.

source of external finance, accounting for 10 per cent or more of gross national income in 2009 in nine landlocked developing countries (see annex, table 2).

45. Official development assistance for transport, storage and communications increased from $775 million to $1.8 billion in the period 2003-2009, with the bulk (40 per cent) of aid going to Afghanistan, and three other countries.

46. Landlocked developing countries as a group experienced an aggregate decrease of 17 per cent in foreign direct investment inflows to $21.9 million in 2009 (see annex, table 7). Despite this contraction, their share of global foreign direct investment inflows increased to 2 per cent in 2009, from 1.5 per cent in 2008.[7] The geographic distribution of foreign direct investment remains uneven. Investment has been heavily concentrated in a few resource-rich countries. Kazakhstan alone accounted for 58 per cent of the total foreign direct investment flows to landlocked developing countries in 2009, while 15 African landlocked developing countries only received $4 billion.

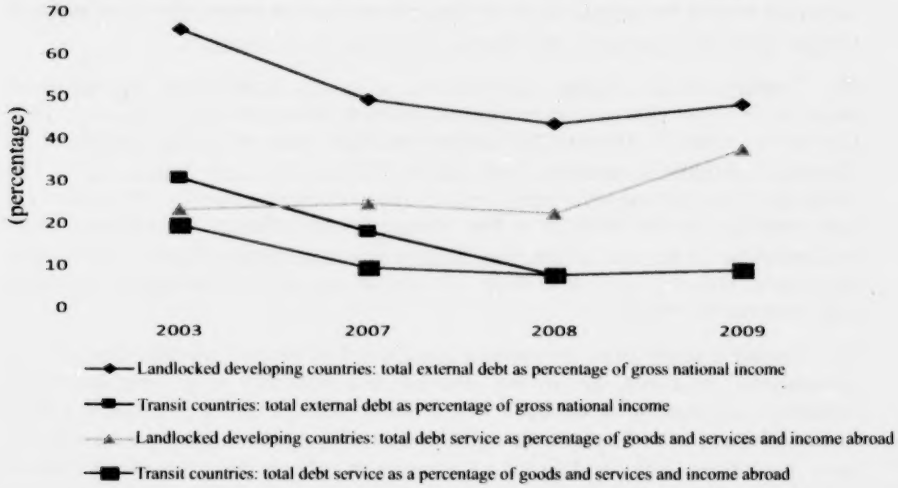
47. Inward foreign direct investment is expected to further increase especially in resource-rich countries due to the rebound in commodity prices and improving economic and financial conditions. For example, foreign direct investment inflows to Kazakhstan in the first quarter of 2010 were 16 per cent higher than during the same period in 2009. Foreign direct investment inflows for Mongolia surpassed $1 billion in 2010, a 25 per cent increase as compared with 2009,[8] and foreign direct investment inflows also surpassed $1 billion in Zambia in 2010. Nevertheless, most landlocked developing countries perform poorly as foreign direct investment destinations, mainly because their economic performance continues to be hampered by inherent geographical disadvantages that are compounded by poor infrastructure, inefficient logistics systems and weak institutional capacities.

48. Landlocked developing countries as a group greatly improved their debt to the gross national income ratio and debt servicing ratio from 2003 to 2009 (see figure I below). However, both ratios increased in 2009. When compared with transit developing countries, landlocked developing countries still have a higher total debt and debt servicing ratio. The number of landlocked developing countries that used to have a total debt to the gross national income ratio of more than 100 in 2003 have been reduced from 6 to only 1 in 2009, and those that had a ratio of 74 to 100 in 2003 have been reduced from 11 to 2 in 2009 (see annex, table 3). The progress is partly due to the Heavily Indebted Poor Countries Initiative and the Multilateral Debt Relief Initiative, which have supported 13 landlocked developing countries. It is important that similar forms of debt relief support are extended to the other landlocked developing countries that do not benefit from the initiatives.

[7] *World Investment Report 2010: Investing in a Low-Carbon Economy* (United Nations publication, Sales No. E.10.II.D.2).

[8] Input provided by the Government of Mongolia.

Figure I
Landlocked developing countries and transit developing countries external debt and debt service



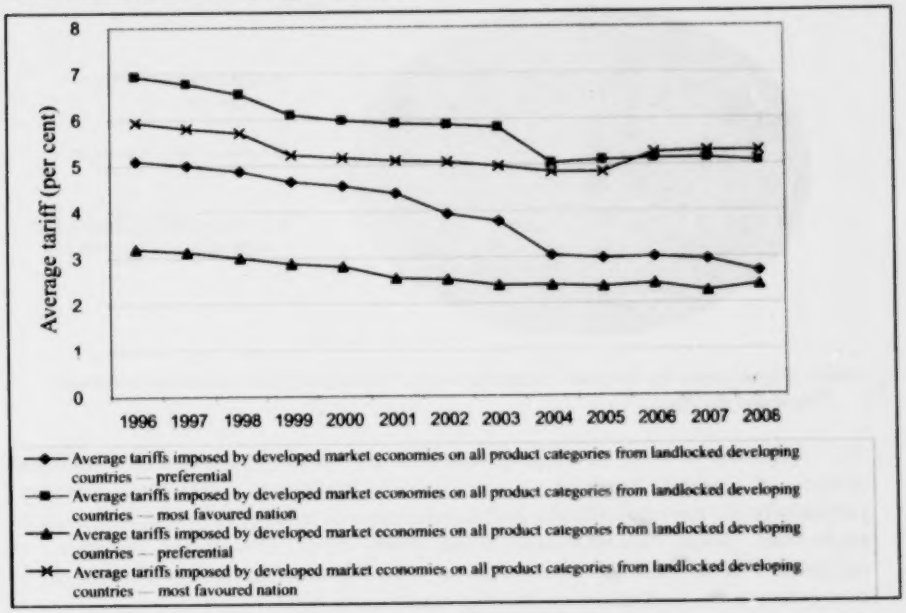
Source: World Bank, *World Development Indicators 2011* (Washington, D.C., 2011).

49. Slow progress has been made in the negotiations of the WTO Doha round of multilateral trading system. It is important for the international community to intensify efforts to conclude the trade negotiations with provisions that are consistent with the trade, development and financial needs of landlocked developing countries.

50. There has been some progress on preferential tariff schemes from developed economies that has benefited landlocked developing countries (see figure II below). Preferential tariffs provide a much-needed price advantage for the products of landlocked developing countries in the markets of developed countries. However, their utilization has often remained limited owing to lack of diversification, the application of burdensome and non-harmonized rules of origin, high transport costs and other supply side constraints.

Figure II

Average tariffs imposed by developed market economies on all product categories from landlocked developing countries


Average tariff (per cent)
8
7
6
5
4
3
2
1
0
1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008
Average tariffs imposed by developed market economies on all product categories from landlocked developing countries — preferential
Average tariffs imposed by developed market economies on all product categories from landlocked developing countries — most favoured nation
Average tariffs imposed by developed market economies on all product categories from landlocked developing countries — preferential
Average tariffs imposed by developed market economies on all product categories from landlocked developing countries — most favoured nation

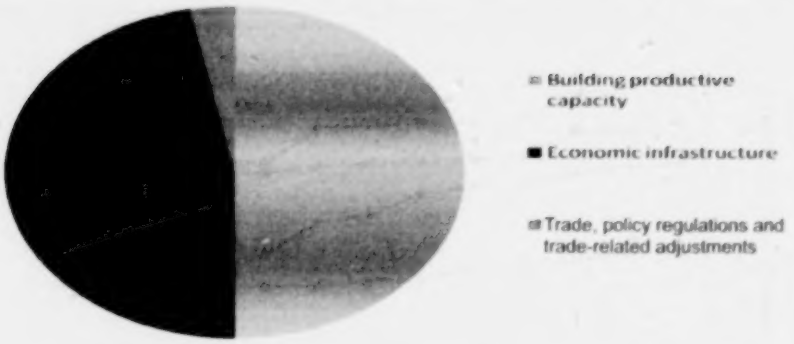
Source: International Trade Centre database.

51. There has been a continued increase in aid for trade disbursements to landlocked developing countries, which increased from $4.7 billion in 2008 to $6 billion in 2009. Five landlocked developing countries (Afghanistan, Uganda, Ethiopia, Mali and Burkina Faso) are among the top 20 recipients of aid for trade in 2009. Globally, the bulk of the total aid for trade went into building productive capacity,[9] followed by investment into infrastructure development[10] and assistance towards capacity-building in developing trade strategies and negotiations, policy regulations and trade-related adjustment costs (see figure III).

[9] For example, business development, assistance to banking and financial services, agriculture, forestry, fishing, industry, mineral resources and mining and tourism.

[10] Building of physical infrastructure such as roads, railways, ports and telecommunication.

Figure III
Use of total global aid for trade by category



Source: Organization for Economic Cooperation and Development-Development Assistance Committee database.

52. A number of other developing countries are becoming increasingly important sources of external financial support for the landlocked developing countries, particularly for the rehabilitation and development of critical infrastructure, such as roads and power. Transnational corporations from developing countries, in particular China, India and South Africa, were the main sources of foreign direct investment in the landlocked developing countries in 2009.

E. Implementation and review

53. The Office of the High Representative for the Least Developed Countries, Landlocked Developing Countries and Small Island Developing States was mandated to enhance its cooperation and coordination with the United Nations system and other stakeholders in order to ensure effective implementation of the Programme of Action. Implementation of the Programme has been undertaken at national, subregional, regional and global levels (see also sect. IV below).

54. On monitoring and review, Member States have prepared reports on the implementation of the Almaty Programme of Action as contributions to the midterm review and as input for the preparation of the annual reports of the Secretary-General on the issue. At the global level, the landlocked developing countries meet annually for a ministerial conference in the margins of the sessions of the General Assembly.

55. At the regional level, the regional commissions have coordinated regional reviews. ESCAP, in collaboration with the Government of Mongolia, organized a high-level Asia-Pacific policy dialogue on the implementation of the Almaty Programme of Action and other development gaps faced by the landlocked developing countries, which was held in April 2011 in Ulaanbaatar. The Committee on Trade, Regional Cooperation and Integration of the Economic Commission for Africa (ECA), held its seventh session in June 2011, where it reviewed the progress that the region had made in implementing the outcomes of the midterm review meeting on the Almaty Programme of Action.

56. In paragraph 32 of its resolution 63/2, on the midterm review of the Programme of Action, the General Assembly is invited to consider, at the appropriate time, conducting a comprehensive review of the implementation of the Programme of Action. Since the end of the first 10 years of the Programme of Action is in 2013, preparatory work for the review needs to commence.

57. Further work is required to develop indicators that can be used to measure the progress achieved in implementing the Programme of Action through reduction of transport and other trade costs. There are currently different approaches being developed by different international organizations in measuring corridor monitoring indicators, for example the time-cost-distance model, the logistical costs and reliability methodology and time-cost methodology in the corridors. Harmonization of such indicators would allow for cross-country and cross-regional monitoring of trade corridors.

58. The recent global financial and economic crisis, changes in food and energy prices and the impact of climate change have revealed the social, economic and environmental vulnerability of landlocked developing countries. It is important therefore to undertake research on the vulnerability of landlocked developing countries to external shocks, through the development of a set of vulnerability indicators that can be used by the landlocked developing countries for early warning purposes.

IV. The actions taken by the United Nations system and other international and regional organizations in implementing the Almaty Programme of Action

59. The Office of the High Representative for the Least Developed Countries, Landlocked Developing Countries and Small Island Developing States continued to assist the landlocked developing countries through mobilization of international and United Nations system-wide support and awareness-raising. In order to strengthen the analytical and negotiation capabilities of landlocked developing countries, the Office supported an international think tank for landlocked developing countries in Ulaanbaatar and drafted, in cooperation with the Office of Legal Affairs, a multilateral agreement on the establishment of the think tank, which was endorsed at the Ministerial Meeting of Landlocked Developing Countries, held in New York in September 2010. The agreement is now open for signature by the landlocked developing countries at the United Nations. The Office continues to compile annual statistics with the latest available data on key economic, social and transport infrastructure indicators for landlocked developing countries. In cooperation with the Department of Economic and Social Affairs, the Office issued the World Statistics Pocketbook 2010: Landlocked Developing Countries.

60. ECA, the African Union Commission, the African Development Bank (AfDB) and the Office of the High Representative for the Least Developed Countries, Landlocked Developing Countries and Small Island Developing States continued to cooperate towards the creation of an intergovernmental agreement to underpin the trans-African highway network by undertaking studies to help to develop the legal framework.

61. The regional commissions assisted Member States in the implementation of the Almaty Programme of Action, through, inter alia, capacity-building programmes, advisory services, support towards transport infrastructure development and the promotion of legal instruments related to trade and transport facilitation. Substantive contributions include the ECA 2010 publication *Assessing Regional Integration in Africa IV: Enhancing Intra-African Trade*, which devoted a chapter to the development of trade transit corridors in Africa's landlocked countries. The Economic Commission for Europe (ECE) and the Organization for Security and Cooperation in Europe (OSCE) will launch the Handbook of Best Practices at Borders in 2011, and ECA, the World Bank and the African Union Commission will publish a compendium of all legal instruments pertaining to transport and trade facilitation.

62. ECA organized workshops on trade facilitation and study tours in key transit ports for landlocked countries and supported the creation of the African Alliance for E-commerce, a framework for the exchange of trade facilitation information and experiences, sponsoring its first technical workshop and second General Assembly. Similarly, the United Nations network for experts for paperless trade in Asia and the Pacific, established by ESCAP and ECE as a community of knowledge and practice for experts from developing countries and transition economies from Asia and the Pacific, supported national, subregional and transcontinental single window and paperless trade initiatives.

63. ECE supported the development of transport infrastructure in the context of trans-European motorway and trans-European railway projects and together with ESCAP promoted harmonization of transport investments in the context of the Euro-Asian transport linkages project. ESCAP also continued to work on fostering synergies among member States, international financing institutions and other stakeholders to explore financing opportunities in priority infrastructure projects along the Asian highway and trans-Asian railway. In October 2010, the Economic Commission for Latin America and the Caribbean (ECLAC) organized an international seminar on sustainable transport policies for countries in Latin America. ECLAC is currently analysing logistics costs and their impact on economic development in the Plurinational State of Bolivia. ECE administers 57 international agreements and conventions in the area of transport, providing the legal and technical framework for developing international road, rail, inland waterway and combined transport.

64. In the area of aid for trade, ECA, together with AfDB, WTO and ECOWAS, organized an aid for trade review for West African States. ECA also collaborated with Central African regional economic communities to organize a preparatory review workshop on aid for trade, which resulted in a road map to guide Central African member States and regional organizations in a donor round table geared towards mobilizing resources for priority transboundary infrastructure programmes.

65. The United Nations Development Programme (UNDP) completed aid for trade needs assessments in Kazakhstan, Kyrgyzstan and Uzbekistan and initiated assessments in Azerbaijan and Turkmenistan. In March 2011, UNDP published the guide entitled *How to Conduct Aid for Trade Needs Assessments in Transition Countries*. UNDP also provided ongoing support to the Government of Mongolia in relation to start-up activities for the landlocked developing countries think tank.

66. The United Nations Conference on Trade and Development (UNCTAD) dedicated a section to the analysis of recent trends in foreign direct investment in landlocked developing countries in its *UNCTAD World Investment Report 2010* and provided capacity-building and technical assistance on trade and transport facilitation.

67. The United Nations Industrial Development Organization (UNIDO), in cooperation with ECA, FAO, IFAD, AfDB and the African Union Commission, developed an agriculture, agribusiness and agro-industries development initiative, which focuses on the development of rural infrastructure, technology, land management and water technology systems and emphasizes the importance of increased private public sector investments and partnerships among farmers and agribusiness in a value-chain approach. UNIDO is also undertaking trade capacity-building at the regional and subregional levels.

68. The World Bank contributes to the implementation of the Almaty Programme of Action through the International Bank for Reconstruction and Development-International Development Association, lending technical assistance and knowledge products. In 2010, loans in the amount of $988 million were extended to finance projects in landlocked developing or transit countries in the area of customs reforms, road or rail corridor and aviation projects, or projects addressing other specific capacity constraints related to landlocked situations. The Trade Facilitation Facility — a $40 million multi-donor trust fund created in 2009 — has been designed to build capacities to speed up the implementation of trade and transport facilitation projects and reforms in low-income countries, especially targeting the needs of landlocked developing countries. Ongoing projects include support for corridor countries in Africa and Asia. The World Bank has also implemented a series of knowledge products, including "The cost of being landlocked: supply chain reliability and logistics costs" and *Connecting Landlocked Countries to Markets: Trade Corridors in the 21st Century*.

69. The WTO secretariat, in cooperation with other international organizations, provides technical assistance to WTO members and observers, upon request, to assess their trade facilitation needs and priorities. As of October 2010, 19 landlocked developing countries had conducted such assessments.

70. The World Customs Organization continued its customs capacity-building activities, in particular through the organization's Columbus programme, which aims at the full implementation of the Framework of Standards to Secure and Facilitate Global Trade as well as other international best practices in the area of customs administration. World Customs Organization organized regional workshops and national workshops and missions in 2010, benefiting landlocked developing countries in Africa, Asia and Europe.

71. The International Trade Center developed and implemented trade promotion and capacity-building projects, such as national capacity-building in the implementation of the integrated framework in Chad, or the SADC supply chain and logistics programme in Malawi. Several multi-country programmes with a focus on one or more trade-related disciplines were implemented, for instance the programme "ACCESS for African Businesswomen in International Trade", which addressed the particular constraints of African businesswomen by means of enhancing their access to a package of trade support services. Information and communications technology

information on trade and export competitiveness was made available to all States Members of the United Nations.

72. In 2010, OSCE organized the eighteenth OSCE Economic and Environmental Forum on the theme "Promoting good governance at border crossings, improving the security of land transportation and facilitating international transport by road and rail in the OSCE region". As a direct follow-up, and in order to raise awareness on the existing tools to fight corruption at border crossings and to offer the opportunity to identify concrete national follow-up activities, OSCE, in cooperation with the World Customs Organization and the OSCE Center in Astana, organized a regional seminar on promoting integrity in customs and border services. Additionally, the OSCE Border Management Staff College in Dushanbe continued to organize training events covering a wide range of issues related to border management.

73. The Afghan-transit project of the International Road Union, undertaken in the framework of the new Euro-Asian road transport initiative, aims at developing road transport haulage from Europe and China to Afghanistan by attracting international investments into ancillary infrastructures and through implementation of harmonized customs procedures. ECE and the Union cooperated to develop best practices applicable for the implementation of the Customs Convention on the International Transport of Goods Under Cover of TIR Carnets (TIR Convention) in the Central-Asian region and introduced them into an updated TIR handbook. The Union and UNCTAD signed a memorandum of understanding in April 2010 to upgrade the Automated System for Customs Data (ASYCUDA) World with the most updated information technology/TIR risk management tools, further to which the transit module of ASYCUDA World now incorporates the latest tools to facilitate and secure the implementation of the Convention.

74. The International Telecommunications Union adopted a programme focusing specifically on the priorities of landlocked developing countries, which entailed assisting countries, inter alia, in migrating from public switched telephone networks to Internet Protocol-based networks, in establishing multi-telecentres, and in introducing broadband technology. Other projects focused on promoting universal access to e-applications and services as well as implementation of e-commerce and e-government projects in many landlocked developing countries in order to enable them to use information and communications technology as a catalyst in trade.

75. The regional banks and regional economic communities in Asia, South America and Africa have taken leading roles in marshalling and supporting implementation of regional infrastructure programmes. ADB implemented various technical assistance and investment projects: under the CAREC programme, ADB has invested around $4 billion so far in the transport and trade facilitation sectors and about $1 billion in the energy sector. In Africa, the African Development Bank is leading resource mobilization and support to the Programme for Infrastructure Development in Africa. In South America, the Inter American Development Bank, the World Bank and the Central American Bank for Economic Integration are supporting the Initiative for the Integration of Regional Infrastructure in South America.

76. COMESA undertook studies, programmes and regional integration arrangements to assist its landlocked members in promoting regional communications and trade. For instance, an East Africa corridor diagnostic study for

northern and central corridors was undertaken to assess the performance of the corridors in order to prepare an action plan for removal of identified transport logistics impediments. The transit data transfer module — a tool developed to facilitate the exchange of transit declarations and transit guarantee information between/among customs administrations — is being piloted at the Chirundu, Zambia, border post and at the Kasumalesa, Democratic Republic of the Congo, border post. The Regional Customs Transit Guarantee — an instrument that has been developed under the auspices of the Protocol on Transit Trade and Transit Facilities has been useful in furthering COMESA regional integration. A pilot test of the scheme was conducted in 2008 in northern corridor countries, and the positive results lead to the roll-out of the initiative in 2010 and 2011.

V. Conclusions and recommendations

77. Being landlocked imposes a major constraint to economic growth and the attainment of development objectives. The economies of landlocked developing countries remain fragile because of their vulnerability to external shocks, owing to limited export diversification, limited productive capacities, lack of export competitiveness and high transport and transit costs.

78. **The international community should support the landlocked developing countries through increased, timely and sustainable financial support in order to help them to accelerate progress towards the achievement of the Millennium Development Goals and strengthen their capacity for climate change mitigation and adaptation.**

79. **Landlocked developing countries and transit developing countries should strengthen effective cooperation through developing and harmonizing relevant policies and prioritizing resource allocations for the maintenance and rehabilitation of transit transport infrastructure. Initiatives that have proved successful, such as the one-stop border post, dry ports, the yellow card and use of information and communications technologies for customs clearance, should be replicated and fully funded.**

80. **Landlocked and transit developing countries are invited to ratify and effectively implement international conventions and agreements, and regional and subregional agreements on transport and trade facilitation.**

81. **The international community should increase financial support to transit transport infrastructure, energy and information and communications technology infrastructure and trade facilitation projects in landlocked and transit developing countries so as to enhance intraregional connectivity, complete missing links and ensure the proper functioning of strategic sea corridors.**

82. **There is a need to develop a networking mechanism aimed at promoting the exchange of experiences and dissemination of information to all relevant stakeholders.**

83. **The international community should further support landlocked developing countries in strengthening their analytical capacities to develop and implement coherent and comprehensive transport policies that support the**

transit corridors needed to facilitate trade and in sharpening their negotiation skills for effective participation in international trade.

84. **The Economic Commission for Africa, the African Union Commission, the World Bank, the African Development Bank and the Office of the High Representative for the Least Developed Countries, Landlocked Developing Countries and Small Island Developing States are encouraged to further their support efforts to elaborate and conclude an intergovernmental agreement on the trans-African highway.**

85. **International organizations and other research institutions should undertake research on the vulnerability of landlocked developing countries to external shocks and develop a set of vulnerability indicators that can be used for early warning purposes.**

86. **The World Trade Organization negotiations on trade facilitation are very important for landlocked developing countries in international trade. The international community should provide support to strengthen the negotiation capabilities of landlocked developing countries on trade facilitation.**

87. **Developed countries are invited to consider providing greater market access for goods originating from landlocked developing countries and improve the transfer of technologies to help to mitigate the high transaction costs stemming from their geographical disadvantages.**

88. **The international community should increase their support towards the Aid for Trade Initiative since it is providing crucial support to help landlocked developing countries in implementing international agreements, strategically strengthening their productive capacities, developing their infrastructure and enhancing competitiveness in the global markets.**

89. **The capital exporting countries are encouraged to adopt policies and incentives that encourage foreign direct investment flows to landlocked developing countries. Landlocked developing countries should promote an enabling environment to attract foreign direct investment and private sector involvement.**

90. **Donor countries and the international financial and development institutions are invited to make voluntary contributions to the trust fund established to facilitate the implementation of and follow-up to the International Ministerial Conference of Landlocked and Transit Developing Countries and Donor Countries and International Financial and Development Institutions on Transit Transport Cooperation, held in Almaty.**

91. **As called for by the General Assembly in its resolution 63/2, the Assembly should consider convening a comprehensive 10-year review of the implementation of the Almaty Programme of Action.**

Annex*

Table 1
Gross domestic product, 2000-2009

	Gross domestic product						
	Estimates at constant 2005 prices (millions of United States dollars)			*Per capita (current United States dollars)*	*Average annual rate of growth (percentage)*		
Landlocked developing countries	*2000*	*2008*	*2009*	*2009*	*2000-2003*	*2008*	*2009*
Afghanistan	2 733	9 037	11 075	457	25.9	2.3	22.5
Armenia	2 764	6 748	5 793	2 770	12.3	6.9	-14.2
Azerbaijan	7 040	24 664	26 949	4 871	10.5	10.8	9.3
Bhutan	559	1 076	1 144	1 783	7.6	5.0	6.3
Bolivia (Plurinational State of)	8 201	11 107	11 480	1 758	2.3	6.1	3.4
Botswana	7 945	11 651	11 226	5 959	6.2	3.1	-3.7
Burkina Faso	3 999	6 199	6 398	517	6.6	4.5	3.2
Burundi	967	1 218	1 260	151	1.8	4.3	3.5
Central African Republic	1 233	1 669	1 697	448	0.8	5.5	1.7
Chad	2 944	5 912	5 818	610	11.4	0.3	-1.6
Ethiopia	8 994	16 844	18 512	345	2.5	11.3	9.9
Kazakhstan	34 877	70 914	71 770	6 981	10.9	3.3	1.2
Kyrgyzstan	2 043	2 985	3 055	835	4.1	8.4	2.3
Lao People's Democratic Republic	2 016	3 781	4 065	884	5.8	7.8	7.5
Lesotho	1 162	1 505	1 527	780	3.2	4.4	1.4
Malawi	2 359	3 513	3 778	318	1.1	9.0	7.5
Mali	4 026	6 322	6 603	679	7.9	5.0	4.4
Mongolia	1 685	3 006	2 957	1 577	4.9	8.9	-1.6
Nepal	6 960	9 255	9 856	436	3.2	4.7	6.5
Niger	2 677	3 899	3 863	343	5.4	5.9	-0.9
Paraguay	6 587	8 811	8 410	2 314	1.9	5.8	-4.5
Republic of Moldova	2 122	3 478	3 252	1 500	6.9	7.8	-6.5
Rwanda	1 783	3 383	3 585	527	7.2	11.6	6.0
Swaziland	2 295	2 790	2 824	2 668	2.3	0.5	1.2
Tajikistan	1 457	2 864	2 962	716	10.5	7.9	3.4
The former Yugoslav Republic of Macedonia	5 421	6 735	6 685	4 662	-0.3	5.0	-0.7
Turkmenistan	6 768	11 922	12 414	3 397	2.6	10.5	4.1
Uganda	7 296	12 680	13 576	523	5.7	9.2	7.1
Uzbekistan	10 490	17 638	18 873	1 199	4.4	9.0	7.0
Zambia	5 758	8 703	8 998	985	4.2	6.0	3.4

	Gross domestic product						
	Estimates at constant 2005 prices (millions of United States dollars)			*Per capita (current United States dollars)*	*Average annual rate of growth (percentage)*		
Landlocked developing countries	*2000*	*2008*	*2009*	*2009*	*2000-2003*	*2008*	*2009*
Zimbabwe	5 804	3 562	3 705	324	-5.8	-14.5	4.0
Landlocked developing countries	**160 963**	**283 875**	**294 112**	**1 061**	**6.3**	**5.8**	**3.6**
Transit developing countries	**4 937 668**	**8 433 400**	**8 793 363**	**2 808**	**5.0**	**6.1**	**4.3**

Source: United Nations Statistics Division; see http://unstats.un.org/unsd/snaama/Introduction.asp. Accessed 24 March 2011.

* For the list of transit developing countries and the composition of developed and developing regions as used in the tables, see www.ohrlls.org/en/orphan/349/.

Table 2
Official development assistance receipts and donor assistance for transport, storage and communications

Landlocked developing countries	*Net official development assistance receipts (millions of United States dollars, current prices)*[a]			*Official development assistance/ gross national income (percentage)*	*Donor assistance for transport, storage and communications (millions of United States dollars, current prices)*[b]		*Aid for trade disbursements (millions of United States dollars, constant prices)*[c]	
	2005	*2008*	*2009*	*2009*	*2003*	*2009*	*2007*	*2009*
Afghanistan	2 818	4 865	6 070	..	94	764	984	1 711
Armenia	170	303	528	5.9	14	27	85	234
Azerbaijan	217	235	232	0.6	3	21	87	118
Bhutan	90	87	125	9.5	11	16	29	40
Bolivia (Plurinational State of)	643	628	726	4.4	27	75	136	221
Botswana	48	720	280	2.4	0	13	15	22
Burkina Faso	693	1 001	1 084	13.5	46	57	283	226
Burundi	364	509	549	41.2	3	48	102	88
Central African Republic	89	256	237	11.9	3	15	30	26
Chad	380	419	561	9.2	29	45	32	77
Ethiopia	1 927	3 328	3 820	13.4	125	256	502	1 117
Kazakhstan	228	333	298	0.3	59	5	108	88
Kyrgyzstan	268	360	315	7.1	9	7	54	58
Lao People's Democratic Republic	302	496	420	7.2	55	27	138	106
Lesotho	67	144	123	5.8	18	6	18	10
Malawi	573	924	772	17.5	32	24	43	28
Mali	704	964	985	11.0	50	45	117	120
Mongolia	215	246	372	9.4	33	35	317	262
Nepal	424	697	855	6.7	40	51	44	53
Niger	520	607	470	8.9	22	39	65	123
Paraguay	51	134	148	1.0	2	24	117	174
Republic of Moldova	169	298	245	4.2	1	22	101	86
Rwanda	577	933	934	18.7	9	29	26	83
Swaziland	47	70	58	2.1	2	0	93	158
Tajikistan	251	291	409	8.3	0	21	10	12
The former Yugoslav Republic of Macedonia	227	205	193	2.2	0	1	46	75
Turkmenistan	30	18	40	0.2	0	1	1	3
Uganda	1 192	1 641	1 786	11.6	31	108	426	457
Uzbekistan	170	187	190	0.6	1	43	26	71
Zambia	1 172	1 116	1 269	11.1	55	36	108	129
Zimbabwe	373	612	737	..	1	0	19	50
Landlocked developing countries	**14 999**	**22 624**	**24 831**	**..**	**775**	**1 862**	**4 159**	**6 021**

Source: Organization for Economic Cooperation and Development, Development Cooperation Directorate, *Development Cooperation Report 2011*. OECD "Aid for trade at a glance: Showing results" (COM/DCD/TAD(2011)3/ANN, June 2011).

[a] Comprises net official development assistance flows from Development Assistance Committee countries, multilateral organizations and non-Development Assistance Committee countries.

[b] OECD Development Assistance Committee and multilateral organization donors.

[c] Excludes multi-country programmes and activities.

Table 3

External debt, debt service and debt relief under the Heavily Indebted Poor Countries Initiative and the Multilateral Debt Relief Initiative

	Total external debt (percentage of gross national income)			*Total debt service, percentage of goods and services and income abroad*			*Total debt relief (millions of United States dollars)*	
Landlocked developing countries	*2003*	*2008*	*2009*	*2003*	*2008*	*2009*	*Heavily Indebted Poor Countries*	*Multilateral Debt Relief Initiative*
Afghanistan	..	20	..	..	0.2	0.4	654	20
Armenia	64	28	55	10.8	13.3	20.9	..	..
Azerbaijan	25	12	12	6.7	0.9	1.7	..	..
Bhutan	82	57	58	5.1	21.3	11.4	..	..
Bolivia (Plurinational State of)	75	34	35	21.3	13.0	14.4	1 967	1 953
Botswana	7	3	14	1.2	1.1	1.2	..	..
Burkina Faso	41	21	23	..	..	..	812	764
Burundi	230	24	39	63.5	13.3	..	1 009	58
Central African Republic	92	49	20	..	..	..	675	435
Chad	67	26	29	6.0	3.2	2.8	241	..
Ethiopia	86	11	18	7.2	3.1	3.1	2735	1 862
Kazakhstan	78	94	113	34.9	42.0	80.2	..	..
Kyrgyzstan	109	49	66	21.6	11.8	14.0	..	..
Lao People's Democratic Republic	114	94	96	21.8	..	..	..	..
Lesotho	56	34	33	8.1	2.5	3.0	..	..
Malawi	130	59	60	..	..	..	1 379	898
Mali	74	24	30	6.5	2.6	..	792	1 308
Mongolia	103	36	56	33.9	2.7	4.8	..	651
Nepal	50	29	29	10.1	8.3	10.4	..	..
Niger	78	17	19	8.6	2.5	4.5	947	283
Paraguay	58	25	30	12.3	5.0	6.1	..	..
Republic of Moldova	88	52	60	11.4	14.8	14.9	..	..
Rwanda	88	15	15	15.1	3.6	4.7	956	234
Swaziland	21	13	15	1.3	..	2.1	..	..
Tajikistan	79	46	51	8.3	7.1	38.4	..	..

Landlocked developing countries	*Total external debt (percentage of gross national income)*			*Total debt service, percentage of goods and services and income abroad*			*Total debt relief (millions of United States dollars)*	
	2003	*2008*	*2009*	*2003*	*2008*	*2009*	*Heavily Indebted Poor Countries*	*Multilateral Debt Relief Initiative*
The former Yugoslav Republic of Macedonia	41	50	62	13.5	9.1	14.8	..	..
Turkmenistan	30	4	3	..	..	..	..	..
Uganda	79	16	16	9.8	2.1	2.0	1 509	2245
Uzbekistan	49	14	12	..	..	..	..	..
Zambia	161	22	27	43.5	3.1	3.8	3 697	1962
Zimbabwe	62	..	..	..	..	..	..	..
Landlocked developing countries	**66**	**43**	**48**	**22.8**	**21.9**	**37.1**	**11 709**	**12 673**

Source: World Bank, *World Development Indicators 2011*.

Table 4

International merchandise trade, exports and imports, and international freight charges

Landlocked developing countries	*Merchandise (millions of United States dollars)*						*Balance of payments freight as percentage of trade*[a]	*Transport equipment*		
	Total exports			*Total imports*				*Percentage of total imports*		
	2003	*2008*	*2009*	*2003*	*2008*	*2009*	*2009*	*2003*	*2008*	*2009*
Afghanistan	..	540	403	..	3 020	3 336	..	..	16	16
Armenia	670	1 055	684	1 237	4 101	3 175	9.5	4	7	4
Azerbaijan	2 592	47 756	14 689	2 626	7 162	6 119	3.2	13	17	13
Bhutan	..	521	496	..	543	529	..	..	9	10
Bolivia (Plurinational State of)	1 651	6 899	5 297	1 684	5 006	4 409	2.7	10	14	13
Botswana	3 802	4 951	3 456	3 964	5 211	4 728	5.5	13	11	13
Burkina Faso	314	..	796	786	..	1 870	9.7	11	..	8
Burundi	66	142	113	145	315	345	18.5	15	12	11
Central African Republic	66	114	81	100	185	212	..	9	9	7
Chad	..	..	..	..	..	..	..	..	..	..
Ethiopia	513	1 602	1 618	2 686	8 680	7 974	9.5	10	6	7
Kazakhstan	12 916	71 172	43 196	8 402	37 815	28 409	4.4	15	12	10
Kyrgyzstan	582	1 618	1 178	717	4 072	2 974	3.6	7	15	9
Lesotho	479	..	..	1 115	..	..	2.7	5	..	..
Malawi	502	879	1 188	785	2 204	2 022	..	12	16	10
Mali	1 007	1 918	..	1 271	3 339	..	11.9	11	7	..
Mongolia	616	..	..	801	..	..	5.3	11	..	..
Nepal	653	..	886	1 802	..	3 754	..	6	..	8
Niger	259	503	..	566	1 247	..	16.5	7	6	..
Paraguay	1 306	4 463	3 167	1 921	9 033	6 940	2.4	6	11	9
Republic of Moldova	790	1 591	1 288	1 402	4 899	3 278	7.1	5	8	5
Rwanda	51	250	261	262	1 036	1 112	21.4	12	7	6
Swaziland	1 655	..	..	1 457	..	..	0.6	8	..	..
Tajikistan	..	..	..	..	..	..	3.8	..	..	..
The former Yugoslav Republic of Macedonia	1 367	..	2 692	2 306	6 852	5 043	4.9	5	7	7
Uganda	532	1 724	1 568	1 375	4 526	4 247	11.6	9	8	9
Uzbekistan	..	..	..	..	..	..	..	..	..	..

	Merchandise (millions of United States dollars)						Balance of payments freight as percentage of trade[a]	Transport equipment		
	Total exports			Total imports				Percentage of total imports		
Landlocked developing countries	*2003*	*2008*	*2009*	*2003*	*2008*	*2009*	*2009*	*2003*	*2008*	*2009*
Zambia	980	5 099	4 312	1 574	5 060	3 793	5.5	8	10	8
Zimbabwe	..	1 694	2 269	..	2 832	3 527	..	..	16	15
Landlocked developing countries	**33 368**	**154 492**	**89 635**	**38 984**	**117 139**	**97 796**	**5.2**	**10**	**11**	**10**
Transit developing countries	**933 854**	**2 647 218**	**2 173 467**	**883 065**	**2 495 852**	**2 057 021**	**3.6**	**6**	**6**	**6**

Source: http://comtrade.un.org; www.infstatistics.org/bop.

[a] Freight charges in the balance of payments comprise all import and export freight charges paid to enterprises abroad or received by national enterprises from abroad divided by the total value of imports and exports multiplied by 100. Payments between domestic enterprises for freight are not included.

Table 5
Selected transport indicators

	Roads		*Railways*	*Waterways*	*Pipelines*	*Air transport departures (thousands)*	
	Kilometres	*Percentage paved*	*Kilometres*	*Kilometres*	*Kilometres*		
Landlocked developing countries	*2000/2008*	*2000/2008*	*2000/2009*	*2007/2011*	*2006*	*2000*	*2009*
Afghanistan	42 150	29	..	1 200	466	3.4	..
Armenia	7 515	90	845	..	2 233	4	7.6
Azerbaijan	59 141	49	2 099	..	4 785	4.4	10.3
Bhutan	8 050	62	..	..	..	1.1	2.7
Bolivia	62 479	7	2 866	10 000	8 994	21.6	19
Botswana	25 798	33	888	..	..	6.7	6.1
Burkina Faso	92 495	4	622	..	..	3.4	1.4
Burundi	12 322	10	..	Lake Tanganyika	..	..	..
Central African Republic	24 307	..	..	2 800	..	1.5	..
Chad	40 000	1	..	seasonal	250	1.5	..
Ethiopia	42 429	13	..	..	..	26.6	44.2
Kazakhstan	93 123	90	14 205	4 000	24 740	8.0	18.8
Kyrgyzstan	34 000	91	417	600	270	6.1	5.5
Lao People's Democratic Republic	29 811	13	..	4 600	540	6.4	9.8
Lesotho	5 940	18	..	..	..	..	..
Malawi	15 451	45	797	700	..	4.8	4.4
Mali	18 709	18	734	1 800	..	1.5	..
Mongolia	49 250	4	1 810	580 (seasonal)	..	6.2	4.8
Nepal	17 280	57	59	..	..	12.1	6.8
Niger	18 951	21	..	300 (seasonal)	..	1.5	..
Paraguay	29 500	51	36[a]	3 100	..	7.6	9.8
Republic of Moldova	12 755	86	1 156	424	1 906	3.7	5
Rwanda	14 008	19	..	Lac Kivu (shallow)	..	..	..
Swaziland	3 594	30	300	..	..	2.6	..
Tajikistan	27 767	..	616	200	587	4.0	9.8
The former Yugoslav Republic of Macedonia	13 840	..	699	..	388	8.0	1.4
Turkmenistan	24 000	81	3 181	1 300	7 864	21.9	15.3
Uganda	70 746	23	261	lakes	..	0.3	0.4
Uzbekistan	81 600	87	4 230	1 100	10 574	30.1	23.2
Zambia	66 781	22	1 273	2 250	771	6.1	..
Zimbabwe	97 267	19	2 583	Lake Kariba	270	13.6	5.9
Landlocked developing countries	**1 141 059**	**36**	**34 192**		**63 002**	**221.6**	**212.2**

Source: *World Development Indicators 2011* World Bank and United States Central Intelligence Agency The World Factbook.

Table 6
Selected telecommunication indicators

	Telephone lines and cellular subscribers per 100 population				*Internet users per 100 population*
	Main lines		*Cellular*		
Landlocked developing countries	*2000*	*2009*	*2000*	*2009*	*2009*
Afghanistan	0.1	0.5	0.0	42.6	3.6
Armenia	17.3	20.4	0.6	85.0	6.8
Azerbaijan	9.9	15.9	5.2	87.8	27.4
Bhutan	2.5	3.8	0.0	48.6	7.2
Bolivia (Plurinational State of)	6.1	8.2	7.0	72.5	11.2
Botswana	7.9	7.0	12.9	96.1	6.2
Burkina Faso	0.5	1.0	0.2	24.3	1.1
Burundi	0.3	0.4	0.3	10.1	1.9
Central African Republic	0.3	0.3	0.1	13.6	0.5
Chad	0.1	0.5	0.1	20.4	1.5
Ethiopia	0.4	1.1	0.0	4.9	0.5
Kazakhstan	12.3	24.7	1.3	109.1	18.2
Kyrgyzstan	7.6	9.1	0.2	81.8	40.0
Lao People's Democratic Republic	0.8	1.6	0.2	51.2	6.0
Lesotho	1.2	1.9	1.1	32.0	3.7
Malawi	0.4	1.1	0.4	15.7	4.7
Mali	0.4	0.7	0.1	34.2	1.9
Mongolia	4.9	7.1	6.5	84.2	3.6
Nepal	1.1	2.8	0.0	19.1	2.0
Niger	0.2	0.4	0.0	17.0	0.8
Paraguay	5.3	6.1	15.3	88.5	17.4
Republic of Moldova	14.2	31.6	3.4	77.3	37.0
Rwanda	0.2	0.3	0.5	24.3	4.5
Swaziland	3.0	3.7	3.1	55.4	7.6
Tajikistan	3.5	4.2	0.0	70.5	10.1
The former Yugoslav Republic of Macedonia	25.2	21.4	5.8	95.1	51.8
Turkmenistan	8.1	9.4	0.2	29.4	1.6
Uganda	0.3	0.7	0.5	28.7	9.8
Uzbekistan	6.7	6.8	0.2	59.7	17.1
Zambia	0.8	0.7	0.9	34.1	6.3
Zimbabwe	2.0	3.1	2.1	23.9	11.4
Landlocked developing countries	**2.8**	**3.9**	**1.1**	**34.7**	**7.1**
Developing regions	**8.0**	**12.2**	**5.5**	**58.3**	**18.1**

Source: International Telecommunication Union; see www.itu.int/ITU-D/ict/.

Table 7
Foreign direct investment net inflows
(millions of United States dollars)

	Foreign direct investment net inflows		
Landlocked developing countries	*2000*	*2008*	*2009*
Afghanistan	0	300	185
Armenia	104	1 132	838
Azerbaijan	130	14	473
Bhutan	0	30	36
Bolivia (Plurinational State of)	736	513	423
Botswana	57	521	234
Burkina Faso	23	137	171
Burundi	12	14	10
Central African Republic	1	117	42
Chad	115	234	462
Ethiopia	135	109	94
Kazakhstan	1 284	15 775	12 649
Kyrgyzstan	(2)	265	60
Lao People's Democratic Republic	34	228	157
Lesotho	32	56	48
Malawi	40	170	60
Mali	82	180	109
Mongolia	54	683	437
Nepal	(0)	1	39
Niger	8	566	739
Paraguay	100	109	184
Republic of Moldova	128	708	86
Rwanda	8	103	119
Swaziland	106	106	66
Tajikistan	24	376	8
The former Yugoslav Republic of Macedonia	215	587	248
Turkmenistan	131	820	1 355
Uganda	181	787	799
Uzbekistan	75	711	750
Zambia	122	939	959
Zimbabwe	23	52	60
Landlocked developing countries	**3 956**	**26 340**	**21 900**

Source: United Nations Conference on Trade and Development see unctadstat.unctad.org.

Table 8
Selected Millennium Development Goals indicators

Landlocked developing countries	*Extreme poverty: population under $1.25 per person/day (percentage)*	*Population undernourished (percentage)*	*Primary net enrolment ratio*	*Gender parity index*	*Maternal mortality ratio (per 100 000 live births)*	*Forest cover (percentage of land area)*	
	2003/2008	*2005/2007*	*2009[a]*	*2009*	*2008*	*2000*	*2010*
Afghanistan	..	..	..	0.67	1400	2	2
Armenia	1.3	22	93	1.03	29	11	9
Azerbaijan	0	11	86	0.99	38	11	11
Bhutan	26.2	..	88	1.01	200	67	69
Bolivia (Plurinational State of)	14	27	95	0.99	180	55	53
Botswana	..	25	87	0.97	190	22	20
Burkina Faso	56.5	9	64	0.89	560	30	21
Burundi	81.3	62	99	0.97	970	8	7
Central African Republic	62.8	40	69	0.71	850	37	36
Chad	61.9	37	..	0.70	1200	10	9
Ethiopia	39	41	84	0.91	470	13	11
Kazakhstan	0.2	8	100	1.00	45	1	1
Kyrgyzstan	1.9	10	91	1.00	81	5	5
Lao People's Democratic Republic	33.9	23	82	0.91	580	72	68
Lesotho	43.4	14	73	1.00	530	0.2	1
Malawi	73.9	28	91	1.03	510	38	34
Mali	51.4	12	80	0.84	830	11	10
Mongolia	22.4	26	100	0.99	65	7	7
Nepal	55.1	16	..	..	380	27	25
Niger	65.9	20	59	0.80	820	1	1
Paraguay	5.1	11	86	0.97	95	49	44
Republic of Moldova	1.9	..	90	0.98	32	10	12
Rwanda	76.8	34	96	1.01	540	14	18
Swaziland	..	18	83	0.93	420	30	33
Tajikistan	21.5	30	98	..	64	3	3
The former Yugoslav Republic of Macedonia	0.3	..	93	1.01	9	36	39
Turkmenistan	..	6	..	..	77	9	9
Uganda	28.7	21	92	1.01	430	21	15
Uzbekistan	46.3	11	90	0.98	30	8	8

Landlocked developing countries	Extreme poverty: population under $1.25 per person/day (percentage)	Population undernourished (percentage)	Primary net enrolment ratio	Gender parity index	Maternal mortality ratio (per 100 000 live births)	Forest cover (percentage of land area)	
	2003/2008	2005/2007	2009[a]	2009	2008	2000	2010
Zambia	64.3	43	92	0.99	470	60	67
Zimbabwe	..	30	..	..	790	49	40
Landlocked developing countries			**81**	**0.92**	**...**	**18**	**17**

Sources: World Bank *World Development Indicators 2011*; Food and Agriculture Organization of the United Nations *The State of Food Insecurity in the World*; United Nations Educational Scientific and Cultural Organization see http://stats.uis.unesco.org/unesco/ReportFolders/ReportFolders.aspx; United Nations *The Millennium Development Goal Report 2010* and FAO *State of the World's Forests 2011*.

[a] In some cases data from 2007 or 2008 may be shown where 2009 estimates are not available.

United Nations A/66/206

General Assembly

Distr.: General
28 July 2011

Original: English

Sixty-sixth session
Item 23 (c) of the provisional agenda*
Eradication of poverty and other development issues

Human resources development

Report of the Secretary-General

Summary

The present report is submitted pursuant to General Assembly resolution 64/218 on human resources development. It provides an overview of the impact of the global financial and economic crisis on human resources development and lessons learned from national experiences to prevent and overcome negative effects of the crisis. It also addresses emerging national challenges and opportunities in human resources development. Selected examples of innovative strategies for sustaining and developing human resources at the national level are provided. The report highlights the role of the international community, including the United Nations system and national Governments, and others, such as the private sector, in promoting human resources development, and includes recommendations for future steps. The report concludes with recommendations building on successful national interventions.

* A/66/150.

11-43627 (E) 160811

Please recycle

I. Introduction

1. The General Assembly, in its resolution 64/218, reviewed the experience of countries in implementing human resources development strategies, examining progress and challenges to date and prospects for the future. The Assembly requested the Secretary-General to submit a report reviewing lessons learned from the global financial and economic crisis on the requirements for human resources development to help countries prevent and overcome the negative effects of crises and to progress towards a more sustainable path of development.

2. In the same resolution, the General Assembly acknowledged the importance of human resources development for achieving the internationally agreed development goals, including the Millennium Development Goals, and for expanding opportunities for all people, particularly the most vulnerable groups and individuals in society. It also recognized the need for more comprehensive, coherent and cross-sectoral approaches and mechanisms for human resources development premised on national development objectives.

3. While considerable effort has been made, many countries, particularly developing countries, continue to face challenges in developing sufficient human resources capable of meeting national development needs. In addition, because of a lack of resources and capacity, developing countries often face difficulties in the formulation and implementation of effective human resources development strategies.

4. The recent global financial and economic crisis further weakened countries' capacity to address challenges in the area of human resources development at the very moment that increased investment in human resources was required to overcome the negative effects of the crisis. This difficulty has been compounded more recently by slow and uneven recovery, the growth in unemployment and high and volatile energy and food prices.

5. The present report provides an overview of the main characteristics of the global financial and economic crisis and their interrelationship with human resources development. The implications of globalization, as well as high and volatile food and energy prices, for national human resources development efforts are analysed, and practical strategies for sustainable human resources development in a wide range of areas are identified. The report was prepared in consultation with the following organizations, although not all of their contributions have been fully incorporated owing to space and other considerations: the regional commissions, particularly the Economic Commission for Europe (ECE), the Economic and Social Commission for Asia and the Pacific (ESCAP) and the Economic and Social Commission for Western Asia, the Food and Agriculture Organization of the United Nations (FAO), the International Atomic Energy Agency, the International Fund for Agricultural Development, the International Labour Organization (ILO), the International Maritime Organization (IMO), the International Telecommunication Union (ITU), the United Nations Development Programme (UNDP), the United Nations Educational, Scientific and Cultural Organization (UNESCO), the United Nations Children's Fund, the World Health Organization (WHO), the World Intellectual Property Organization (WIPO) and the World Bank. The report concludes with specific recommendations for future action.

II. Implications of the global financial and economic crisis for national human resources development

A. Major characteristics of the financial and economic crisis

6. Although its most acute phase appears to have passed, the effects of the global financial and economic crisis continue to be felt by countries in all regions. Moreover, after almost two years of fragile and uneven recovery, global economic recovery has started to decelerate and is expected to continue slowing down in the latter half of 2011 and in 2012, raising concerns of further downside risks.[1]

7. High unemployment levels in advanced economies, especially for youth, continue to pose risks for world stability. Developing countries, especially in emerging economies, continue to recover, even though the pace varies across countries.

8. Furthermore, the countercyclical measures taken by many Governments in the early stage of the global crisis have been abandoned in favour of fiscal austerity. Faced with widening fiscal deficits and rising public debt, many Governments have been phasing out stimulus measures, ostensibly for fiscal consolidation. This is jeopardizing Government-led recovery in many countries, increasing the risk of longer-term unemployment and further decelerating global recovery. Many Governments are cutting needed social expenditures, particularly in the areas of education and health, thus adversely affecting long-term human resources development.

9. The growth of average monthly wages has slowed, from 2.8 per cent in 2007 to 1.5 per cent in 2008 and 1.6 per cent in 2009.[2] Wage growth has moderated and there was growing inequality, even prior to the crisis. Real wage declines have adversely affected the purchasing power and well-being of workers and their families, especially those in low-paid jobs. This trend, however, varies across regions. Asia has seen little adverse impact of the global crisis on real wage growth in 2008 (7.8 per cent) and 2009 (8.0 per cent). Latin America and the Caribbean observed continued growth in real wages in 2010/11 as a result of higher labour demand, increasing employment, the temporary shortage of skilled workers and increased labour productivity.

10. Low-income developing countries and small middle-income countries, on the other hand, are expected to continue to experience negative effects of the global crisis. This is mainly because the flows of official development assistance (ODA), while still positive in 2010, are most likely to slow down in the near future owing to slow economic recovery in advanced economies. In addition, the external debt of developing countries and countries with economies in transition has increased. Furthermore, many developing countries now face volatile primary commodity prices, particularly for oil and food, which soared during the first half of 2011.

---

[1] *World Economic Situation and Prospects 2011* (United Nations publication, Sales No. E.11.II.C.2).

[2] International Labour Organization, *Global Wage Report 2010/11: Wage Policies in Times of Crisis* (Geneva, 2010).

11. Many countries are also facing the emerging challenge of a "job-poor" recovery, with unemployment and underemployment remaining high. According to ILO, the number of unemployed was 205 million in 2010, 27.6 million higher than the pre-crisis level. The global unemployment rate stood at 6.2 per cent in 2010, up from 5.6 per cent in 2007.[3] Nearly 30 million jobs were lost worldwide between 2007 and the end of 2009, and at least 22 million new jobs need to be created to return to the pre-crisis level of global employment.

12. Employment recovery generally lags behind economic recovery. Employment recovery is estimated to have taken three years following the 1997/98 Asian financial crisis, and the evidence shows that the recovery time to pre-recession employment levels has become successively longer. Since the recent global crisis caused a faster and steeper rise in unemployment, it is expected to take even longer for employment to recover. Furthermore, the job losses during the crisis risk becoming permanent, with unemployed workers needing to acquire different skills in new and growing sectors to secure jobs.

13. Although job growth had rebounded and unemployment rates had fallen to pre-crisis levels by the end of 2010, quick employment recovery is not guaranteed in developing countries for at least two reasons. First, most of the 47 million new workers worldwide entering labour markets each year are searching for jobs in developing countries. Second, economic recovery has to be driven by the productive sectors in order to sustain economic growth. However, many job losses have occurred in the dynamic export sectors, suggesting the need for widespread structural change.[4]

14. In addition, there remain acute concerns about job quality and worker vulnerability. In response to rising unemployment levels, many countries have enhanced labour market flexibility. However, in the absence of strong labour institutions, labour market deregulation has often lowered wages and employment conditions. This focus on labour market flexibility also risks impairing long-term growth potential, with workers stuck in a low pay/low productivity trap. A high turnover of workers, owing to greater labour market flexibility, discourages workers from acquiring training that would enhance labour productivity.

B. Impact of global crises on national human resources development

15. The global financial and economic crisis continues to have significant negative implications for human resources development in almost all countries. In advanced economies, the impact has been mainly through two channels: the increase in unemployment and a decrease in budgetary resources devoted to government education and training programmes.

16. Many developing countries, particularly middle-income countries, appear to have weathered the global financial crisis well. However, pre-existing socio-economic challenges are expected to adversely affect long-term human resources development in view of, inter alia, the job-poor economic recovery, high youth unemployment and volatile food and energy prices.

---

[3] ILO, *Global Employment Trends 2011: The Challenge of a Jobs Recovery* (Geneva, 2011).

[4] *Report on the World Social Situation 2011: The Global Social Crisis* (United Nations publication, Sales No. E.10.IV.12).

Reduced fiscal investment in human resources development

17. The fiscal positions of the advanced economies have deteriorated substantially as a result of the crisis. The sovereign debt of advanced economies is likely to increase drastically over the next few years, owing mainly to reduced revenues and large unfunded liabilities. To manage debt, many governments in developed countries are facing increasing pressures to reduce social expenditure in the medium term. In some countries, austerity-induced funding cuts have already taken effect, adversely affecting numerous social programmes supporting human resources development.

18. For example, Latvia has made significant cuts in health and reduced public funding in education by half from the 2008 level. Ireland has raised prescription, hospital and nursing home payments, made numerous cuts in education and reduced support for job training programmes. Denmark has proposed to significantly reduce student grants. In the United States of America, most school districts have implemented cuts in education programmes, reducing the number of teachers and their salaries. The United Kingdom of Great Britain and Northern Ireland has proposed nearly doubling university fees after a 14 per cent cut in university budgets in 2010. Greece and Italy have implemented pay freezes on public sector workers, including those in education and health care. France has announced the elimination of 100,000 public sector jobs, many in education and health care, by replacing only half of those retiring and reducing public sector pay.

19. While the majority of developing countries have managed to sustain social sector budgets, tightening fiscal policies have resulted in spending freezes or cuts in education, health and other human resources development expenditures in some countries.[5] The shrinking pool of financial resources for education is forcing some countries to delay or defer funds for education (e.g. early childhood education and literacy programmes) or withhold increases in education expenditure despite increasing enrolment, as well as cut spending for higher education.

20. The decline in ODA flows may also adversely affect human resources development in developing countries. There are clear indications that health budgets have tightened in African countries as a result of reduced funding by donors, among other reasons.[6] This will have serious consequences, as many African countries rely on external funding for a substantial proportion of their health expenditure. In 2008, 23 countries received between 20.3 and 63.5 per cent of their total health funding from external sources. Also, the share of external assistance to basic education has been static since 2002, and decreased by 6 per cent between 2007 and 2008 in sub-Saharan Africa.[7]

21. In addition to having long-term consequences on human resources development, the depletion of resources also has a short-term effect on training and skills development. Most labour markets are already burdened by a surplus of unemployed and underemployed youth, due in part to mismatches between skills in

[5] UNESCO, "The impact of the crisis on public expenditure on education: findings from the UNESCO quick survey", Impact of the Global Financial and Economic Crisis on the Education Sector, No. 1 (Paris, 2009).

[6] WHO, *World Health Report 2006: Working Together for Health* (Geneva, 2006).

[7] UNESCO, *Education for All Global Monitoring Report 2011: The Hidden Crisis: Armed Conflict and Education* (Paris, 2011).

demand and skills acquired. As such, it has become necessary to "retool", retrain and to upgrade the skills of the unemployed and underemployed. In addition to strengthening employment policies and labour market institutions, upgrading skills through improved educational outcomes, vocational and on-the-job training and the acquisition of new technologies has become increasingly critical.

High and volatile food and energy prices

22. Recent high food and energy prices have put pressure on human resources development in many developing countries. Low-income food-deficit countries have been hit the hardest. While high food prices can potentially benefit producers, they harm net food buyers (those who do not produce enough to cover their food needs). Higher prices in international markets have not triggered positive supply responses by farmers in developing countries.

23. At the community and household levels, high food and energy prices often lead to changes in consumption patterns. Growing difficulties in access to food may lead to risky coping strategies, including distress asset sales, the withdrawal of children from school, cutbacks of health-care expenses and worsening of diets and food intake. Nutritional deficiencies and chronic hunger are the most immediate consequences affecting people's mental and physical abilities to work, which in turn lead to losses in productivity and income. The high cost of energy exacerbates the living conditions of poor households, especially those with already limited access to electricity, increasing their reliance on biomass for cooking. Higher oil prices increase farmers' production costs and the processing and distribution of agricultural commodities, thus further increasing food prices.

Reducing employability

24. The global crisis has diminished the long-term employability of many entry-level workers. Young people are currently nearly three times more likely to be unemployed and are more likely to be in vulnerable jobs in most regions.[8] In both developed and developing countries, youth unemployment and underemployment rates have reached alarming levels. At the end of 2010, there were an estimated 77.7 million unemployed young people,[9] marginally down from 79.6 million in 2009, but still far more than the 73.5 million total in 2007. The rate of global youth unemployment stood at 12.6 per cent in 2010.[3]

25. Even before the crisis, existing human resources were not fully utilized as a result of below-potential economic growth, poorly functioning labour market institutions and/or the mismatch between the skills of workforces and labour market demand. However, a new surge in the unemployed, especially among young people, will have long-term implications for national human resources development, not only because their inputs are not efficiently utilized, but also because their future productivity will be constrained.

26. In addition, gender inequality is exacerbated by the global crisis, increasing risks, particularly for young women. When crises and other factors weaken young women's capacity and undermine their social and economic advancement, it

[8] Economic Commission for Latin America and the Caribbean/ILO, The Employment Situation in Latin America and the Caribbean, Bulletin No. 5, June 2011.

[9] Defined as those 15-24 years of age.

exacerbates chronic poverty, including by increasing the likelihood of transmitting poverty to the next generation.

27. The economic capacity of those who are unable to get jobs declines over time, as they are more likely to be ill-equipped when the economy recovers. Higher unemployment also reduces the sources of income normally spent on food, health care and education, and thus reduces the overall capacity and well-being of the workforce. This has an especially negative impact on young people, as they are at the age when skills formation is normally high. Some youth, however, may pursue additional education because of the lack of available jobs. For example, several Latin American countries observed a fall in the labour supply among young people because they remained in the educational system longer after the crisis hit.

28. Skills training can also help to delay entry into the labour market. Such training should, however, be designed to lead to employment and income-generating opportunities, through combination with on-the-job training, job search assistance, career guidance and counselling. Technical vocational education and training systems not only create an entry-level pathway from school to a skilled job, but also retool workers to improve their employability. Recognizing their potential to meet the needs of both youth and employers, an increasing number of countries are focusing on such systems as an important policy agenda.[10] Some Governments, in collaboration with the business community, legislatures and academia, have developed "retooling strategies" for youth that aim to identify likely skill gaps and shortages in the near future.

III. Challenges and opportunities in national human resources development

29. Globalization has created opportunities and challenges for human resources development. Information and communications technologies and other innovative technologies have lowered functional, hierarchical and geographical barriers and drastically changed how labour markets operate. Private and public institutions are now able to reach out to the most talented workers in a cost-effective manner, which has created opportunities for talented individuals and countries with skilled workforces. On the other hand, this may also lead to brain drains for developing countries, while unskilled workers in developed countries may face greater job insecurity as migrant workers enter labour markets or jobs are outsourced to other countries.

30. Continuous investment in human resources development for sustaining skilled workforces attuned to the demands of increasingly competitive global markets is therefore critical. A competent human resources base enhances productivity and economic growth in all sectors. However, simply enhancing the skills, knowledge and abilities of individuals may not be sufficient, as national economic competitiveness is measured not only by the aggregate skills of a country's workforce, but also by the flexibility and capacity of the workforce to adjust to changing needs with speed and efficiency.

[10] ILO, Increasing the Employability of Disadvantaged Youth: Responding to the Impact of the Financial and Economic Crisis, Guidance Note (Geneva, 2010).

31. Different types of skills are required at different levels of development. For example, increasingly interactive, adaptable, analytical and cognitive skills are necessary to achieve higher levels of labour productivity. As workers shift from one type of skill to another in a fluid labour market, there is a need to build "soft skills", involving adaptability and flexibility, beyond occupational skills. Even for the public sector, new types of skills and capacity are required in such areas as effective communication, knowledge assimilation and management, strategic planning and the ability to coordinate a wide range of stakeholders in public, private and civil society institutions. A shift towards a green economy also requires reconciling the need for creating green jobs with adjustments needed in other economic sectors.

32. There is a growing recognition that many educational and training systems are not adequately preparing human resources for changing needs, thus creating a mismatch between demand and supply. Although recognizing the problem, many developing countries have not yet been able to integrate emerging skill needs into the school curricula, formal education or training programmes.

A. Human resources development and underutilized subgroups

33. Demographic trends, including the "youth bulge" of new job seekers in Africa and the Middle East and the shrinking labour forces in Europe and in Central and East Asia owing to low fertility rates and ageing populations, pose another set of challenges beyond creating new jobs.

34. Integrating disadvantaged groups, such as women, youth, minorities, persons with disabilities, or indigenous peoples, into the labour market remains a challenge. The low utilization of human resources means lost opportunities in terms of productive output, social security, income tax contribution and savings through lower welfare payments. Improving the educational achievement and labour market performance of marginalized groups will not only enhance overall national human resources capacity, but also positively contribute to the national economy.

35. Maximizing the use of labour resources requires policies that reduce gender-based barriers to education, training and employment. Across regions, women tend to have lower economic activity rates than men. They are concentrated in fewer, often low-paid occupations in the informal sector. Women work fewer hours in paid employment (owing to the higher prevalence of part-time work) and have more career interruptions due to family responsibilities. This gender segregation in the labour market reflects stereotypes in education and the gender roles prevailing in society.[11] The efficient use of the female labour force can be promoted by increasing women's participation in a wide range of occupations in formal employment.

36. In general, the agriculture sector suffers from low human resources capacity, gender inequality and a lack of investment in new technologies and infrastructure. In many developing countries, where women play a key role in agriculture,[12]

[11] In the ECE region, women represent the large majority (three quarters) of tertiary students in health- and welfare-related subjects, but are a minority (one quarter) in engineering, manufacturing and construction.

[12] FAO, *The State of Food and Agriculture 2010-11: Women in Agriculture: Closing the Gender Gap for Development* (Rome, 2011).

improving women's productivity will result in increased food availability and agricultural productivity. According to recent estimates of FAO, if women had the same access to productive resources as men, they could increase yields on their farms by 20-30 per cent. This could raise total agricultural output in developing countries by 2.5-4.0 per cent, which would in turn reduce the number of hungry people in the world by 12-17 per cent.

37. Child labour, common in many regions, deprives children and adolescents of the chance to acquire skills and education, often permanently compromising their prospects. Decreased education leads to low-skilled workforces with exposure to low wages and vulnerable jobs. The prevention and elimination of child labour, allowing all children to benefit from education and training, would increase the likelihood of their obtaining gainful jobs and better incomes as youth and adults.

B. Migration and human resources development

38. With rising unemployment, many host countries have tightened immigration controls and introduced tougher requirements for migrant workers. Also, migrant workers tend to lose their jobs more quickly than other workers as a consequence of national policies or public pressures, during periods of economic slowdown when immigrants are often targeted for ostensibly making the situation more difficult. Migration has a significant impact on human resources development through a number of transmission mechanisms. The remittances of migrant workers increase household incomes and improve education and health outcomes in the countries of origin. Information, knowledge and skills brought back by migrant workers help innovation and entrepreneurship in their home countries. At the same time, the migration of skilled workers can lead to shortages of skills in the countries of origin, while high unemployment rates create outmigration pressure for skilled workers. The complexity of issues related to migration and their implications for human resources development need to be further examined from multiple points of view.

39. In 2010, an estimated 214 million workers migrated to other countries, of whom 49 per cent were female, up from 195 million in 2005; despite a slowdown because of the economic crisis, the number continues to increase.[13] Six out of every ten international migrants (128 million) reside in developed countries today, while the majority of international migrants (74 million) originated in developing countries (see A/65/203).

40. In countries where the majority live in poor socio-economic conditions, globalization acts as a "pull" factor, with the promise of better jobs and higher pay. At the same time, low wages, combined with unsatisfactory and often hazardous working conditions, act as "push" factors for outmigration. As a result, some developing countries face the problem of brain drain, losing their highly skilled human resources developed over many years.

41. The outmigration of skilled workers, owing to high unemployment or an inadequate job supply, can be regarded as a brain drain. In many countries with high outmigration, unemployment is a chronic problem. Promoting migration as a strategy for solving unemployment, however, could lead to a loss of skilled labour

[13] Department of Economic and Social Affairs, Population Division, Trends in international migrant stock: the 2008 revision (United Nations database, POP/DB/MIG/Rev.2008).

needed locally, especially when opportunities to migrate abroad are concentrated in certain professions. For example, migration in the Pacific region is more skewed towards the skilled, partly because of the policies of the main destination countries, which favour skilled workers in certain professions. High migration rates can eventually lead to high outflows of skilled workers, especially in health and education.

42. According to the *World Health Report 2006*, a substantial number of health workers leave their home countries each year, either temporarily or permanently.[6] The World Health Assembly, acknowledging the complex issues surrounding the mobility of health workers, adopted the Global Code of Practice on the International Recruitment of Health Personnel in May 2010.[14]

43. Other migrant workers acquire knowledge and skills in the countries to which they migrate. These skills can ultimately improve the quality of the workforce in their home countries. As a result, several countries have reacted with domestic job creation programmes combined with incentives to assist returning migrants to reintegrate into communities. However, low-skilled workers usually engage in low-skill activities in destination countries, which provide little chance for acquiring or upgrading skills. Strategic human resources development planning for outgoing and returning low-skill migrant workers will help to maximize the development benefits gained by migrant workers.

C. Remittances

44. Remittance flows to low- and middle-income countries amounted to $316 billion in 2009, down from $336 billion in 2008 (see A/65/203). The decline in overall flows was due to a steep decline in remittances from the top remitting countries in Europe, the United States and the Russian Federation. Many countries in Eastern Europe and Central Asia, which rely heavily on remittances, experienced as much as a 21 per cent fall in remittances. North Africa has also been severely affected by high unemployment in oil-rich countries. However, remittances overall remained resilient against the economic downturn and have rebounded significantly, although not back to pre-crisis levels.

45. Remittances are increasingly playing a key role in enhancing human resources development in countries of origin, as a substantial amount of this income is used to finance education and health expenditures. Reviews of household surveys show that once basic consumption needs are met, remittances are increasingly spent for investing in businesses as well as for education. Evidence from Pakistan, the Philippines and the Pacific island countries shows that remittance-receiving households can afford to keep their children in school longer and can afford private education, usually perceived as being of higher quality.

[14] WHO, *Sixty-third World Health Assembly, Geneva, 17-21 May 2010, Resolutions and Decisions*, Annexes (WHA63/2010/REC/1).

IV. Practical strategies for sustainable human resources development: lessons learned from national experiences

46. In response to the effects of the global financial and economic crisis, many countries have implemented various temporary, medium- and long-term measures to retain, support and retool their human resources. Longer-term human resources needs in such areas as information and communications technology, green economy, intellectual property, the design of effective social protection programmes, the reduction of urban/rural gaps in education and health services and productive agriculture and rural development have also been addressed.

Measures taken to respond to the global financial and economic crisis

47. In a job-poor recovery, some advanced countries have opted to reduce workforces or freeze employment, while others have chosen to negotiate with labour unions to reduce working hours and/or wages to contain job losses. Other countries have implemented active labour market policies to integrate the unemployed into the workforce or to encourage employers to retain human resources during the crisis. Examples of such measures include job-retention subsidies and recruitment incentives, subsidies for job-sharing programmes, reductions in non-wage labour costs for hiring the unemployed, job search assistance and matching, business start-up incentives, work experience programmes, training programmes and investment in information technology for managing human resources information and processes.

48. Measures have also been taken to make human resources development more cost-effective by improving teacher training, curricula and vocational training. Adoption of good practices could save considerable resources.

49. The European Union created a European Globalization Adjustment Fund in 2007 providing €500 million annually to help unemployed workers obtain new skills or start up their own businesses. The programme was amended in 2008 to help workers affected by the financial crisis. In addition, a "New skills for new jobs" initiative was launched in 2008 to upgrade skill levels, improve forecasts of future job needs and increase dialogue between the business community and education providers.

Investing in human resources through social protection programmes

50. Even before the global crisis, a growing number of countries had devised comprehensive strategies to enhance the human resources development and income of poor households. Often combined with poverty reduction and social inclusion strategies, such comprehensive social protection programmes have proven effective in both mitigating immediate economic shocks and contributing to human resources development.

51. Successful social protection programmes, including conditional and non-conditional cash transfers, social pensions and employment guarantee schemes, are well documented (see E/CN.5/2011/2). Typical conditional cash transfer programmes target poor families with children, and consist of small cash grants and transfers in kind conditional on children's school attendance and regular health check-ups. By offsetting the costs of education and health care, such programmes are designed to increase school attendance and retention and prevent disease and malnutrition, thus contributing to a better-educated and healthier workforce. They

also safeguard families from various risks caused by unemployment, sickness, disability, old age and natural disasters.

52. The Bolsa Familia programme of Brazil, the largest conditional cash transfer programme, provides monthly subsidies to more than 12 million poor families, conditional on school attendance and antenatal and post-natal care. The Oportunidades programme of Mexico substitutes isolated income transfers, such as in kind services (a package of health, nutritional and educational benefits) and price discounts, with targeted income transfers under certain conditions. The programme covers 5 million families, or 25 per cent of the population, with a budget of $3.3 billion in 2007. Other programmes, such as Argentina's Plan Jefes y Jefas de Hogar Desocupados, conditional on school attendance and immunization, also offer training for participants to develop new vocational skills.

53. A variety of social protection initiatives are emerging in Asia. China's minimum living standards guarantee schemes provides regular cash and/or in kind support to poor households, covering 66 million, or nearly 5 per cent, of the population in 2008. The Benazir Income Support programme in Pakistan aims to increase the purchasing power of economically vulnerable families. The Pantawid Pamilyang Pilipino programme of the Philippines is a comprehensive national poverty reduction and social development strategy, enabling poor families to invest in human resources by offsetting the costs of both health care and education.[15]

54. In sub-Saharan Africa, social protection programmes target mainly the most vulnerable and often integrate cash transfers with service provisions. The Productive Safety Net programme of Ethiopia was shifting away from emergency food aid distribution, providing transfers to 8 million food-insecure households by the end of 2008. The programme provides transfers in cash and/or food in return for work and direct support to households with no labour or other means of support. In Kenya, a cash transfer programme for orphans and vulnerable children, covering 100,000 households and 230,000 orphans and vulnerable children, combines transfers to households in extreme poverty with conditionality on health care and school attendance.

55. Various innovative initiatives are being implemented to improve employability and generate short- and long-term employment opportunities for vulnerable communities. Activities include small-scale labour-intensive public works, targeted schemes to support the employment of individuals belonging to marginalized groups and wage subsidy schemes for encouraging small- and medium-sized enterprises to hire job-seeking youth. Social protection programmes encourage labour market participation in low- and middle-income countries through guaranteed public work opportunities.[16]

56. The National Rural Employment Guarantee Scheme of India, the largest of its kind in the world, is based on a statutory right to 100 days of work annually at the minimum wage. In 2007-2008, it provided jobs for almost 34 million rural households at a cost of 0.3 per cent of gross domestic product. More than half the beneficiaries were agricultural and unskilled workers. The scheme enables families

[15] ESCAP, *The Promise of Protection: Social Protection and Development in Asia and the Pacific* (Bangkok, 2011).

[16] UNICEF, Social Protection: Accelerating the MDGs with Equity, Social and Economic Policy Working Brief (New York, 2010).

to acquire assets, such as livestock, and to increase spending on food and non-food items. The Expanded Public Works programme of South Africa (the second phase of which was launched in 2009) generates short- and medium-term employment by providing additional work opportunities (between 100 days and 24 months), combined with training in literacy, numeracy and vocational and business skills.

57. Interventions to develop a healthy workforce may take years before results are observed; however, returns from such investments can be significant. Over the past 20 years, Brazil has trained and recruited more than 25,000 family health teams in remote and rural areas, covering approximately 60 per cent of the population. Ethiopia has trained 32,000 health extension workers since 2005 for deployment in remote health posts. Thailand introduced an integrated approach, called "local training and hometown placement", which recruits students with a rural background to be trained as nurses and doctors in nearby communities. These efforts have reduced urban/rural gaps and improved health outcomes.

Human resources development in emerging areas

58. "Green growth" has been adopted as one of the regional strategies for achieving sustainable development in Asia and the Pacific. A series of regional green growth policy dialogues, training-of-trainers sessions, seminars and national workshops have been conducted for government officials, policymakers and practitioners to strengthen their capacity to develop and implement green growth policies, strategies and road maps.

59. For example, Cambodia has established a national green growth secretariat, and its interministerial green growth working group has developed a national green growth road map. Kazakhstan has conducted a national study on the application of green growth policy tools in strategic management and planning. The Astana Green Bridge Initiative for the Europe-Asia-Pacific Partnership for Green Growth was endorsed at the sixth Ministerial Conference on Environment and Development in Asia and the Pacific in 2010. A pro-poor green business initiative based on the provision of renewable (biogas) energy, clean water and sanitation facilities has been developed in Samoa and replicated by other communities in Fiji, Vanuatu and other Pacific small island developing States.

60. The need for information and communications technology (ICT) system capacity has increased, as ICT has become vital for socio-economic development in almost all countries. The use of ICT services has continued to grow despite the recent economic downturn. At the end of 2009, there were an estimated 4.6 billion mobile cellular subscribers globally. More than half of the total population in developing countries had access to mobile cellular services, and approximately 26 per cent of the world's population had access to the Internet (64 per cent in developed countries and 18 per cent in developing countries or 14 per cent excluding China).[17] According to the World Bank, in Africa, access to telephone services, particularly mobile phones, escalated from 2 million users in 1998 to more than 400 million in 2010. The remarkable growth in Africa in the past decade, which attracted over $56 billion in private sector investment between 1998 and 2008, is due largely to the influx of mobile technologies.

[17] ITU, *Measuring the Information Society* (Geneva, 2010).

61. However, increasing Internet access requires addressing the challenge of providing universal access to broadband networks. Broadband is now seen as an essential element of national infrastructure, like transport, water and energy networks. The availability and use of broadband infrastructure enables Governments to transform service delivery and promote business, innovation and competitiveness. However, fully exploiting the potential benefits of a broadband economy requires the development of a broad range of new expertise and skills at different levels across societies, including formulating and implementing ICT policies.[18]

62. To promote the adoption of broadband-friendly practices and policies, the Broadband Commission was established by ITU and UNESCO so that all people could take advantage of its benefits. The role of broadband for human resources development and education is a key topic for the Commission, and a working group on the issue has been established.

63. Some countries have invested significant ICT resources in education. In Singapore, the third master plan for ICT in education (2009-2014) aims to strengthen competencies for deeper learning and to encourage knowledge creation through ICT use. Jordan, recognized as a regional technology hub, has been building its ICT infrastructure and promoting ICT as a tool to improve human resources and foster economic development. Since 2003, the Government has put strong emphasis on the application of ICT and invested significant budgetary resources through its national education strategies to improve Internet penetration to 50 per cent to increase ICT revenues and employment.

64. Rapidly changing technologies and the complexity of Internet protocol systems pose challenges for national institutions. Access to protected intellectual property is increasingly necessary for the private sector, Governments and research institutions. As a result, the need to enhance skills for intellectual property policy evaluation and management has become acute, particularly in developing countries.

V. Role of the international community in formulating and implementing national human resources development strategies

A. Role of the international community

65. ODA flows are expected to decline with continued fiscal austerity in developed countries owing to greater sovereign debt following the global financial and economic crisis. The international community can sustain a level of engagement and support developing countries in strengthening their human resources through more targeted and cost-effective approaches. Renewed focus should also be placed on the least developed countries and countries with small economies where human resources development needs are the greatest.

66. United Nations organizations have supported human resources development in emerging areas, such as the green economy, ICT, intellectual property, international maritime rules and standards and the peaceful application of nuclear science and

[18] ITU, The Role of ICT in Advancing Growth in Least Developed Countries: Trends, Challenges and Opportunities 2011 (Geneva, 2011).

technology. In addition, more comprehensive and integrated approaches have emerged in social protection programmes, creating agricultural and rural employment and addressing urban/rural gaps in health and education.

67. UNESCO has monitored the impact of the crisis on the education sector in its member States through an initial exploratory survey examining education budgets in 50 developing countries,[5] a more detailed examination of economic growth, revenues and education budgets in 12 countries,[19] and other studies to assess the magnitude and nature of the impact of the crisis on day-to-day school activities.

68. FAO has recently adopted a corporate strategy on capacity development, clearly shifting from its traditional approach of providing training for individuals to enhancing national capacity for managing long-term change in agriculture and rural development. In 2010, WHO issued global policy recommendations to address the rural/urban maldistribution of health workers. WHO is working with partners to support national efforts in implementing those guidelines.

69. The World Bank has been assisting developing countries in investing in the ICT infrastructure necessary for creating jobs and expanding production, services and trade. The Regional Communications Infrastructure programme in East Africa is one such initiative. ITU extended a series of capacity-building activities to develop skilled Internet and "new broadband economy" professionals through its academic and learning events.

70. The United Nations Public Administration Network[20] offers various free online training tools and learning resources on innovative practices in governance and public administration. Its country studies[21] facilitate mutual learning among Governments and international, regional and national institutions for capacity development in the public sector.

71. WIPO provides comprehensive capacity-development opportunities for developing countries, including through its worldwide Academy, e-learning, training on PATENTSCOPE research and patent information, technology and innovation support centres and WIPO Lex,[22] a database that provides free access to intellectual property legislation.

72. To respond to the shortage of qualified and experienced human resources in developing countries, the Integrated Technical Cooperation Programme of IMO aims to enhance human and institutional capacities in implementing IMO rules and standards. The International Atomic Energy Agency supported capacity-building in the peaceful use and application of nuclear energy. It provides training, at the interregional, regional and national levels, on nuclear law, energy system analysis and planning, nuclear safety and security and the application of nuclear science and technology in key areas such as food and agriculture, health, water resources management and monitoring and protection of marine and terrestrial environments.

73. Examples of capacity-building initiatives supported by ESCAP include the "Academy of ICT Essentials for Government Leaders" training programme, online green growth training-of-trainers programmes, the green growth portal of the

[19] See UNESCO, document 184 EX/10.

[20] See www.unpan.org.

[21] See www.unpan.org/unpacs.

[22] See www.wipo.int/wipolex/en/.

regional network of policymakers, the Asia-Pacific Research and Training Network on Trade and the United Nations Network of Experts for Paperless Trade.

B. Role of the private sector

74. The private sector has a critical role in driving economic growth in developing countries. Public-private partnerships have emerged as a major option for developing and maintaining large-scale public infrastructure, including broadband, or in making basic service delivery more efficient. While careful design is needed, public-private partnerships could offer viable options for further enhancing human resources development, particularly when austerity measures are being undertaken by major donor countries.

75. The UNDP Public-Private Partnerships for Service Delivery programme[23] seeks to increase access by the poor to basic services such as water, waste removal, energy, education and health by promoting inclusive partnerships among local governments, businesses and communities. Other successful public-private partnerships in the health sector include the GAVI Alliance and the Global Fund to Fight AIDS, Tuberculosis and Malaria.

76. In addition, inclusion of the private sector in the formulation of human resources development strategies can be beneficial in identifying future growth sectors and the new skills required. Collaboration with the private sector can be also sought in skills development, on-the-job training and the recruitment and retention of young workers.

C. Role of national Governments and development partners

77. National Governments have primary responsibility for human resources development. Their vision and political will make a great difference. The recent financial and economic crisis has posed challenges to Governments, but has also brought opportunities. The existence of a comprehensive and coherent strategy enables Governments to strategically prepare their human resources, ensuring that they are attuned to future labour market needs and ready to take advantage of opportunities brought about by new technologies and innovation. Furthermore, sustainable long-term investment by Governments in human resources development is indispensable.

78. In addition to comprehensive human resources development strategies, sectoral polices and strategies need to incorporate human resources dimensions. Donor countries may revisit their development aid policies and consider allocating ODA to strengthen human resources development in developing countries, particularly the least developed countries. A review of ODA to examine the extent to which human resources development is supported through sectoral flows of ODA may also be helpful.

[23] See www.undp.org/pppsd.

VI. Conclusions and recommendations

Conclusions

79. Human resources development lies at the heart of economic, social and environmental development. A skilled, educated, healthy, capable, productive and flexible workforce, equipped with knowledge of newly emerging areas, is the foundation for countries to achieve sustainable economic growth and social progress. As such, every country, regardless of economic status, needs to align human resources development with national development strategies.

80. Many developing countries continue to face challenges in developing human resources sufficient to meet national economic and social needs. In addition, because of a lack of resources and capacity, developing countries often lag behind in formulating and implementing effective human resources development strategies.

81. Underutilized human resources need to be fully integrated into labour markets. Effective use of ICT is also key to successful human resources development. As high and volatile food and energy costs continue to threaten food and energy security, particularly in rural areas, capacity to meet food and energy needs must be strengthened. Finally, comprehensive social protection programmes are integral to successful human resources development strategies.

Recommendations

82. The following recommendations should be considered:

National level

(a) Governments should place human resources development at the core of economic and social development and intervene effectively to enhance such development and to quickly and greatly reduce the share of the population in low-productivity jobs;

(b) Upgrading human skills is necessary, as most jobs to be created are likely to be in new and innovative sectors, including in the "green economy";

(c) Countries with advanced economies should maintain or enhance measures to boost job-rich recovery, such as policies and incentives to enhance labour productivity and stimulate private investment, besides efforts to reduce budget deficits in the long term;

(d) Governments should strengthen social protection systems to enhance human resources development;

(e) Governments should better align education and training systems and labour market needs. School curricula and skills training programmes must be updated regularly in close consultation with employers;

(f) Governments should strengthen labour institutions and regulations to respond in a timely manner to economic downturns by preserving jobs and protecting workers in vulnerable jobs;

(g) Strategies to strengthen human resources development should incorporate efforts to invest in emerging sectors, particularly ICT and environmental enhancement;

(h) Measures should be devised to reduce unemployment and underemployment among young men and women, who have been disproportionately affected by the job-poor recovery, including by providing incentives for recruiting, retaining and retooling, assistance in searching for jobs and matching jobs to skills, technical, vocational and on-the-job training and promoting youth entrepreneurship;

(i) Efforts should be made to reduce barriers to employment, particularly gender barriers;

(j) Innovative measures should be taken to maximize the benefits of migration while minimizing the negative effects. More integrated analysis should be carried out on migration patterns and the impact of migration from macroeconomic and labour market perspectives with a view to national human resources development;

(k) Interlinkages among human resources development, energy, food security, agriculture and rural development should be better understood and addressed;

International level

(l) To align with national strategies, bilateral and multilateral donors should support developing countries in enhancing national human resources development. North-South, South-South and triangular cooperation should contribute to human resources development in developing countries;

(m) Relevant United Nations entities and civil society actors, including the private sector, should shift their approach from training individuals to building institutional capacity to address long-term national human resources development needs;

(n) Donors should consider dedicating more ODA to human resources development and study how sectoral aid could better support such development;

(o) The feasibility of expanding public-private partnerships in developing countries should be examined, particularly for job creation and youth employment;

(p) Efforts should be undertaken to lower remittance costs to maximize the benefits of migration for human resources development;

(q) Governments, donors and United Nations organizations should support the Social Protection Floor initiative.[24]

[24] See www.icsw.org/doc/SPF/SPFI_Brochure_Jun10_Eng.pdf.

United Nations A/66/207

General Assembly

Distr.: General
28 July 2011

Original: English

Sixty-sixth session
Item 17 (d) of the provisional agenda*
Macroeconomic policy questions: commodities

World commodity trends and prospects

Note by the Secretary-General

The Secretary-General has the honour to transmit to the General Assembly, as requested by the Assembly at its sixty-fourth session in resolution 64/192 of 21 December 2010, the present report on world commodity trends and prospects, including on the causes of excessive commodity price volatility, as prepared by the secretariat of the United Nations Conference on Trade and Development.

* A/66/150.

11-43642 (E) 160811

Please recycle

Report of the secretariat of the United Nations Conference on Trade and Development on world commodity trends and prospects

Summary

Over the past 12 months, commodity markets have recovered from the lows of the 2008-2009 global economic and financial crises, with prices reaching record levels in 2011, in exceptionally volatile markets. Prices of crude oil, minerals and precious metals have more than doubled their end-of-year 2008 levels. The prices of key agricultural commodities, including coffee, maize, cotton, oats and sugar (although not rice) have also surpassed their levels since the last report on world commodity trends and prospects (see A/64/184), issued in 2009.

Surging commodity prices have contributed to the recent popular uprisings and food riots in some countries as food-price inflation (particularly concerning staples) and rising energy costs have taken their toll. In recent years, high prices across a range of commodities, as well as the diversification benefits stemming from a wide array of investment opportunities, have drawn speculative investors — for example, hedge funds and commodity-index and exchange-traded funds (ETFs) — into commodity markets. Further, increasing demand in emerging economies, sovereign debt problems, the faltering value of the United States dollar and concerns about inflation have made these markets attractive to speculative investors.

The negative impacts of the growing volatility and unexpected commodity price swings on global food security and economic welfare for producers, industry and commodity-dependent developing countries have prompted collaborative global action (see, for example, the Group of Twenty (G-20) Action Plan on Food Price Volatility and Agriculture). It is imperative that global initiatives and national policies be effectively aligned, resourced and implemented so as to address the critical issues affecting international commodity trade and the development prospects in those countries. Policy measures should aim to improve market functioning and increase countries' resilience to shocks.

Contents

		Page
I.	Introduction	4
II.	Recent developments in commodity markets: fluctuating fortunes — from boom to bust to boom	5
III.	Market developments in major commodity groups	6
	A. Agricultural and food crops	6
	B. Forestry	10
	C. Energy: oil and gas	11
	D. Crude oil	12
	E. Natural gas	13
	F. Coal	14
	G. Minerals, ores and metals	15
IV.	Commodity price volatility: potential policy responses at the domestic and international levels	18
	A. Policy responses to commodity price volatility	18
	B. Supply management schemes: international commodity agreements	19
	C. Income support programmes	20
	D. Market-based risk management mechanisms	21
	E. Revenue management	22
	F. Diversification and value-addition	23
V.	Concluding remarks	24
Annex		
	Commodity price development and the financialization of commodity trading	26

I. Introduction

1. The present report on world commodity trends and prospects, prepared by the secretariat of the United Nations Conference on Trade and Development pursuant to General Assembly resolution 64/192, provides an analysis of the causes of excessive commodity price volatility.

2. Since mid-2009, when the last report (see A/64/184) was prepared, commodity price trends have been driven by strong demand in emerging Asian economies, stock replenishment in the countries of the Organization for Economic Cooperation and Development (OECD), and diminished concerns about the contagion of financial turbulence in Europe. The commodities that have experienced the largest increases in prices were agricultural raw materials, minerals and metals. In contrast, the prices of agricultural commodities grew at moderate rates, with the exception of some tropical beverages (coffee, for example).

3. Much of the surge in prices and volatility in non-agricultural commodity and food markets in the last six months may be attributed to the geopolitical tensions in major oil-producing countries — Algeria, the Libyan Arab Jamahiriya, Nigeria and Venezuela (Bolivarian Republic of), and elsewhere.[1] Growing demand for raw materials for industrial use and infrastructure development in emerging economies has also helped drive the rising prices of these commodities. Furthermore, sovereign debt problems, a faltering United States dollar and concerns about inflation have attracted speculative investment in commodities, particularly oil and precious metals derivatives, thereby contributing to market volatility.

4. Growing price volatility in commodity markets has prompted collaborative global action directed towards seeking out potential solutions. The Action Plan on Food Price Volatility and Agriculture promulgated by the Group of Twenty (G-20) leading market economies, under the auspices of the presidency of France, aims to mitigate the impact of price volatility upon food security. Such initiatives at all levels — national, regional and international — must be effectively implemented and developed further if they are to effectively address the difficult challenges affecting commodity trade and the development prospects for all commodity-dependent developing countries.[2]

5. This report intends to bring to the attention of Member States, through the General Assembly, the challenges and opportunities associated with the current high and volatile food and energy prices for trade and development. The substantial windfall revenues due to rising prices of agricultural and natural resources (for example, oil and gas, minerals and industrial and precious metals) must be prudently managed if they are to have a lasting impact on development. Likewise, the risks of political instability and food insecurity engendered by high food prices must be mitigated. Section II provides a synopsis of recent developments in commodity markets; section III reviews prices and markets within major commodity groupings — agriculture and food, oil and gas (energy), and mineral and metals; and section IV outlines potential policy responses to commodity price volatility at the

[1] The fact that the civil unrest in the Libyan Arab Jamahiriya took 39 million barrels of high-quality light sweet oil off the market was partially responsible for the sharp surge in crude prices, which peaked at $127 per barrel in April 2011.

[2] Commodity-dependent developing countries are defined as those for which commodity exports account for more than 60 per cent of total merchandise exports.

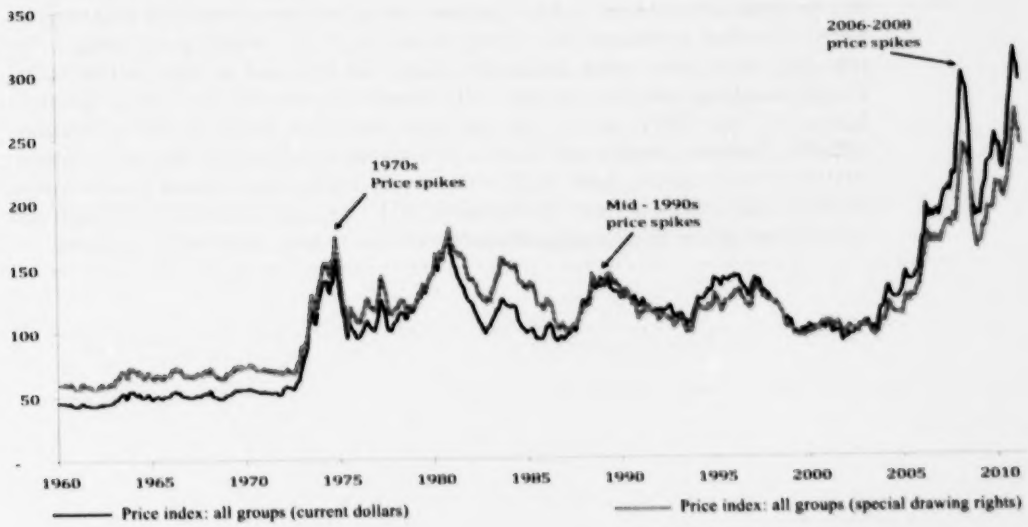
domestic and international levels. Concluding remarks are offered in section V. The annex to this report contains a discussion on the issue of commodity price development and the financialization of commodity trading.

II. Recent developments in commodity markets: fluctuating fortunes — from boom to bust to boom

6. It is widely recognized that there have been two major commodity price booms since the late 1950s — the first between 1973 and 1980, and the second beginning in 2002. The rise in commodity prices between 2002 and 2008, and especially between 2006 and 2008, was particularly pronounced for metals, crude oil and food. The 2008-2009 global financial crisis sent prices plummeting from mid-2008 across a broad range of commodities as global growth slowed down and consumer demand weakened in most major economies.

7. However, since the crisis in 2008-2009, all commodity subgroups have rebounded strongly; in the case of metals, agricultural raw materials and beverages, prices have surpassed even 2008 highs (see figure I). Energy prices (particularly crude oil) have more than doubled, although they remain below their former peaks. Minerals and industrial and precious metals have risen 120 per cent from their lowest point in mid-2008-2009. The prices of key agriculture and food (agrifood) products, beverages and agricultural raw materials have surpassed their previous record highs of mid-2008 (see figure II). By mid-2008, commodities had enjoyed a five-year price boom, the longest and broadest rally of the post-Second World War period after almost 30 years of generally low but moderately fluctuating prices.

Figure I
UNCTAD non-oil commodity price index
(January 1960-May 2011; 2000 = 100)



Source: UNCTADstat.

III. Market developments in major commodity groups

8. The present section provides a broad overview of markets and price situations in the major commodity groups — agriculture and food, energy, agricultural raw materials, minerals and metals. The majority of the recent price hikes in agrifood and non-agrifood commodities may be explained by market fundamentals: rising demand for commodities in emerging economies (especially China and India); adverse weather patterns due to greater climatic variability (increased incidence of floods and droughts); low yields and declining productivity growth rates in some regions; low inventories or stock levels; and increasing scarcity of arable farmland and water. Moreover, insufficient investment in mineral exploration and new technologies during the 1990s has led to supply shortages in this sector. In addition, the depreciation of the United States dollar, and government policies (subsidies, export restrictions and biofuels mandates) have also impacted commodity prices. Biofuels mandates may have diverted key staples (e.g., maize, palm oil and sugar cane) and agricultural land away from food production and towards the production of fuel.

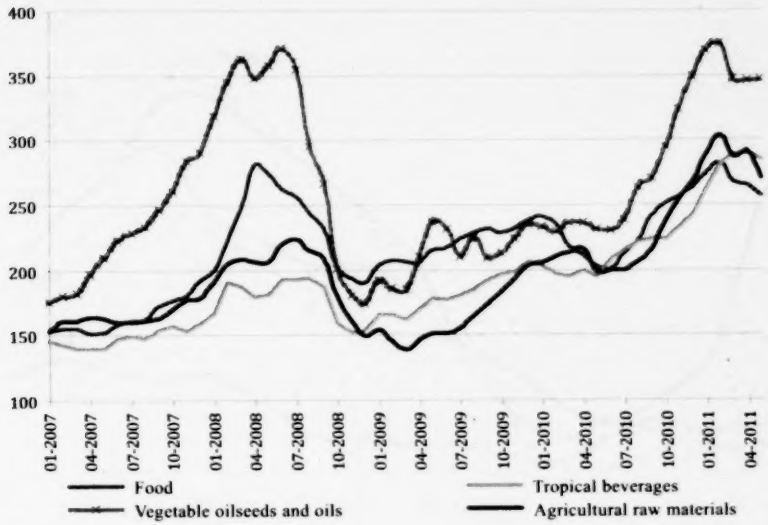
9. Recent geopolitical tensions in oil-producing countries in the Middle East and North Africa further fuelled the sharp upward trajectory in crude oil (and gasoline) prices during the first quarter of 2011. Finally, increased speculative investments in precious metals and minerals (seen as an insurance policy against low rates of economic growth in OECD countries) have also induced price rises in these commodities since June 2010.

A. Agricultural and food crops

10. The United Nations Conference on Trade and Development (UNCTAD) agricultural commodity price index peaked in February 2011. Figure II shows that agricultural commodity prices have risen unevenly. The price index of agricultural raw materials experienced a sharp increase owing to supply shortfalls generated by adverse weather conditions and strong demand in Asian emerging economies. The UNCTAD food price index decreased during the first half of 2010 before rising sharply, reaching a peak in February 2011 (figure III), and averaged 269 points from January to May 2011, up 21 per cent from the same period in 2010. Headline inflation (including energy and food) in developing countries rose from 6 per cent in 2010 to 6.9 per cent in April 2011, while world food price inflation in developing countries exceeded 9 per cent in February 2011.[3] Arguably, the burden of high and volatile food prices falls disproportionately on low-income developing countries.

[3] World Bank, "Global Economic Prospects: June 2011" (Washington, D.C., 2011), inflation annex (p. 67).

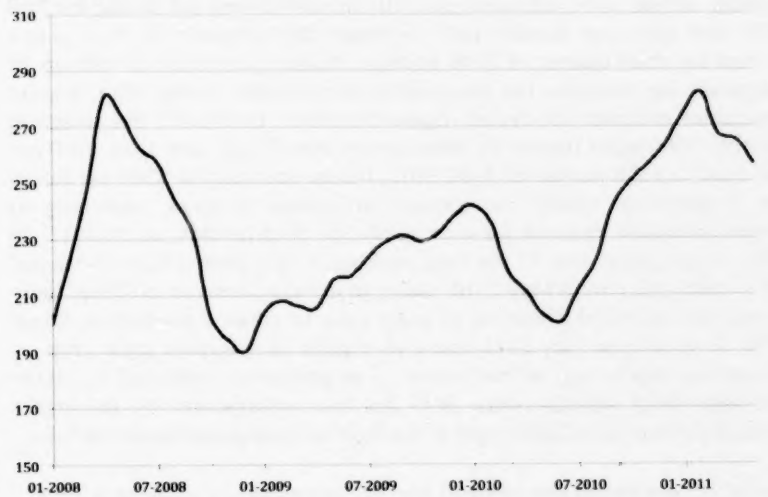
Figure II
Price indices of groups of agricultural commodities, January 2007-May 2011
(2000 = 100)



Source: UNCTADstat.

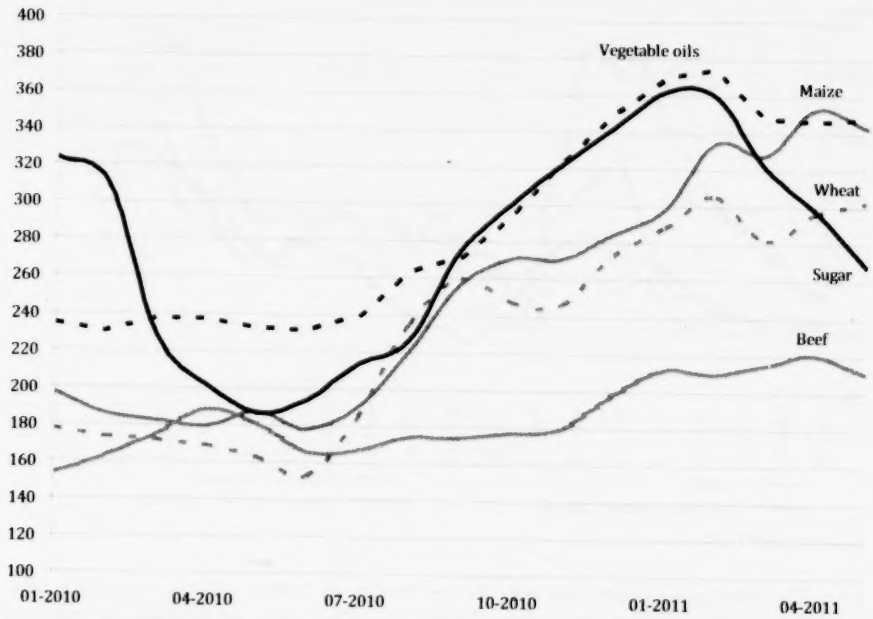
11. The food price index rise was driven mostly by higher cereals, vegetable oils, meat and dairy product prices (see figure IV). This was not critical for most of Africa because of good harvests of maize and sorghum, the main exception being the Horn of Africa where drought has exacerbated food insecurity. In Asia, prices for edible oil and some cereals (for example, wheat) are especially high.

Figure 3
UNCTAD food price index, 2008-2011
(2000 = 100)



Source: UNCTADstat.

Figure IV
Selected food commodity price indices, 2010-2011
(2000 = 100)



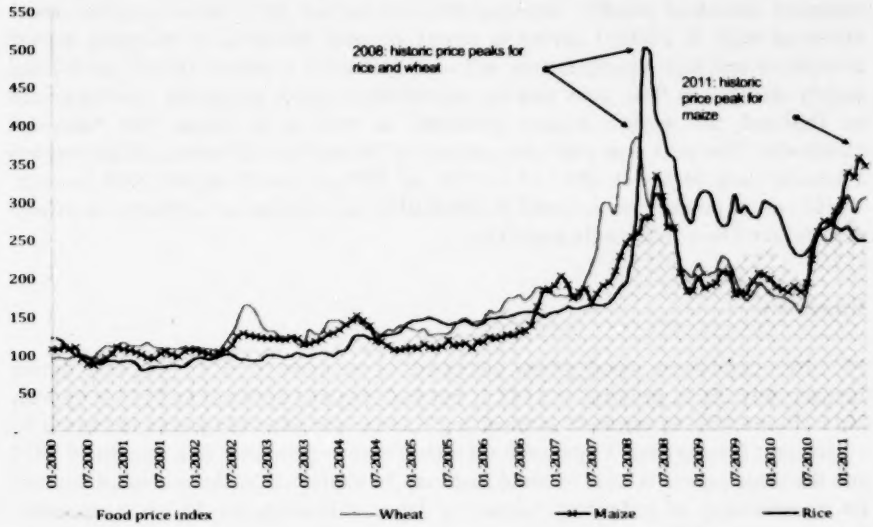
Source: UNCTADstat.

12. The benchmark wheat price rose to a high of $360 per ton in May 2011, just short of the price of $364 per ton reached in February 2011. The outlook for 2011/12 wheat crops is unclear, owing to unfavourable weather conditions in the United States of America and the European Union (EU).

13. The prices of rice, corn and sugar generally trended downward during the first half of 2010 and then rose steadily until February 2011 (figure IV). Rice prices recovered over the third quarter of 2010 because of adverse weather conditions in large Asian producing countries, but are unlikely to rise further during 2011 because of large quantities available for export (figure V). Maize in 2011/12 has traded at prices above the 2008 highs (figure V). Maize prices rose 98 per cent, from $160 per ton in June 2010 to $318 per ton in April 2011, before declining to $309 per ton in May 2011. Furthermore, rising consumption of animal products, especially in China,[4] helped stimulate demand for corn needed to feed animals in 2010/11. In January 2011, sugar prices rose 95 per cent, peaking at 29.6 United States cents per pound (¢/lb), from 15.2 ¢/lb in May 2010, owing to growing demand in China, India and Indonesia and increased diversion of sugar cane to ethanol production. Sugar prices fell to 21.95 ¢/lb in May 2011 based on reports of a surplus sugar crop — about 10.3 million metric tons of raw value — as producers responded to higher prices. The sugar price increase since 2010 has been underscored by the higher projected world demand for refined sugar in the light of anticipated market deficits.

[4] China, the world's second-biggest corn consumer after the United States, is estimated to use 47 times more corn than it did 10 years ago.

Figure V
Trends in world cereal price indices, 2000-2011
(2000 = 100)



Source: UNCTADstat.

14. Edible oil price indices peaked at 374 in February 2011, before declining (7.2 per cent) to 347 in May 2011. Price volatility in the edible oil markets is highly contingent on supply-and-demand prospects in major oilseeds-producing and exporting countries. Considering that China is the world's largest consumer of vegetable oils, the "China effect" on global oilseeds (notably soybeans) supplies and markets is critical to market prospects. Two of the most contentious issues involving both the oils and the oilseeds markets concern biofuels and sustainable palm oil production. Those issues have major implications for international trade, economic growth, investment, food security and environmental stewardship. The recent oilseed price surge reflects mainly a progressive tightening in global supplies combined with steady demand growth in major importing countries (see figure II).

15. The tropical beverages price index has risen steadily since December 2001, from 75 to a peak of 285 in May 2011 (figure II). There has been a fall of 5.4 per cent in the International Coffee Organization composite indicator price, from a monthly average of 228 US¢/lb for May to a monthly average of 215.6 US¢/lb in June.

16. Cocoa prices peaked at $1.60/lb in January 2010 owing largely to supply deficits.[5] However, prices dipped to a three-month low of $1.39/lb in August 2010, only to gradually rally to $1.58/lb by February 2011 and subsequently falling. Most African producers have enjoyed good harvests in the current crop year owing to good weather conditions. For example, cocoa arrivals in Côte d'Ivoire as of June

[5] International Cocoa Organization (ICCO), "Cocoa market review: May 2010" (London, 2010). Available from http://www.icco.org.

2011 amounted to 1.286 million tons, a figure 22 per cent higher than that for the same period in the previous season.[6]

17. After having fallen to 139 in March 2009, the price index of agricultural raw materials increased steadily, reaching 303 in February 2011. Natural rubber prices remained high in 2010/11 owing to strong demand for tyres in emerging market economies and high energy (crude oil) costs (affecting synthetic rubber prices) and supply disruptions from poor weather conditions in major producing countries such as Thailand, the world's biggest producer, as well as in China, Viet Nam and Cambodia. This peak was also underscored by the activity of cotton, which reached a historic peak in March 2011 of $2.3/lb, up 270 per cent from the 2009 average. World cotton production declined in 2009/2010 in a context of projected increased demand for fibres from India and China.

B. Forestry

18. Non-coniferous wood prices increased by an average of 2.1 per cent during January-July 2010, peaking at $142.1, but had steadily declined to $133.9 by May 2011 (figure VI). In contrast, tropical log (sapele and okoume) prices increased by 10 per cent (sapele) and 23 per cent (okoume) between the first five months of 2010 and the same period in 2011, a trend that may be explained by the increased demand for construction of temporary homes in Japan following the March earthquake. Stronger demand due to the slight upturn in the world economy, and its effect on the construction sector in Asian developing countries and, to a lesser extent, in developed countries, may also have contributed to higher prices.

[6] ICCO, "Cocoa market review: June 2011" (London, 2011). Available from http://www.icco.org.

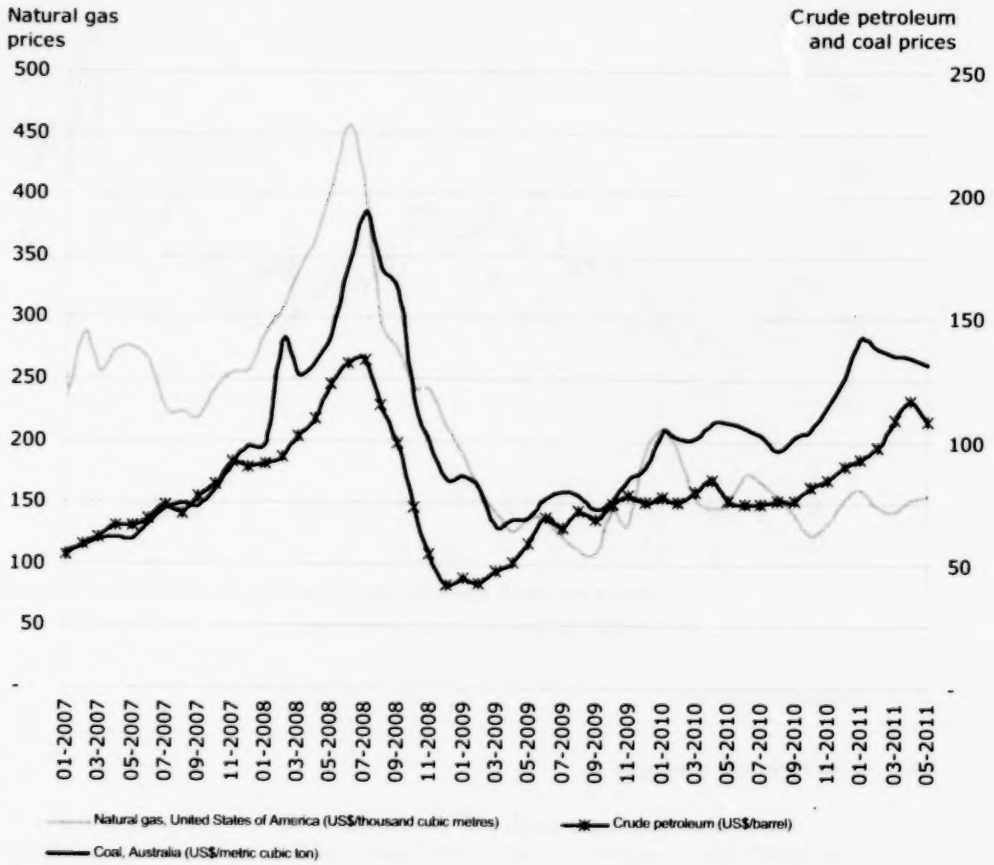
Figure VI
Tropical log prices, 1980-2011
(United States dollars per cubic metre)

Source: UNCTADstat.

C. Energy: oil and gas

19. World primary energy consumption is dominated by oil, natural gas and coal. The Middle East consumes oil and natural gas overwhelmingly, while coal and oil are the main sources of energy in Asia and the Pacific. Driven by demographic changes and rising incomes, Asia leads growth in energy consumption. Nevertheless, its primary energy consumption per head is relatively low, as compared with that of developed economies. Figure VII summarizes the key market trends for oil, natural gas and coal.

Figure VII
Monthly average prices of crude oil, natural gas and coal, January 2007-May 2011



Sources: UNCTADstat (for crude oil prices); International Monetary Fund (IMF); International Financial Statistics (for natural gas and coal prices).

D. Crude oil

20. Average oil prices reached $79 per barrel during 2010. In April 2011, the monthly average price of crude oil surged to US$ 116.30 per barrel,[7] almost triple its level in December 2008, although still below the previous cyclical peak of US$ 132.50 per barrel in July 2008. In a context of the continuing weakness of the United States dollar, increasing demand, instability in the region of the Middle East and North Africa, the disconnect between market fundamentals and production quotas of the Organization of the Petroleum Exporting Countries (OPEC) and

[7] UNCTADstat: average of the daily prices of United Kingdom Brent, Dubai and West Texas Intermediate, equally weighted.

declining reserves, the oil market faces uncertainties which pose a challenge to forecasting the behaviour of oil prices over the short and medium term.

21. From January to November 2010, monthly average prices fluctuated between US$ 74 and US$ 85 (figure VII), above the 2009 average of US$ 61.79 per barrel. The 2010 rise in prices was underpinned by market fundamentals. The recovery of industry and trade has led to a strong surge in oil demand. In 2010, the increase in global oil demand averaged 2.8 million barrels per day (mb/d),[8] more than double its average growth during the 2000s. Supply, however, did not grow at the same rate. Non-OPEC oil producing countries could increase supply by only 1.1mb/d in 2010 and OPEC output growth was limited to 0.7 mb/d (including natural gas liquids).

22. The period between December 2010 and June 2011 witnessed a high level of volatility in the oil market. In December 2010, the average price of crude oil broke away from its relative stability and rose to above US$ 90 per barrel. Oil prices continued this upward trajectory, peaking at US$ 116.30 per barrel in April 2011. Tighter supply and sustained demand growth largely explain this price upswing. The political turmoil in the region of the Middle East and North Africa has led to the loss of 1.3 mb/d of light sweet crude supplied by the Libyan Arab Jamahiriya, and has raised concerns about further disruptions of the energy supply. Despite high prices, the demand growth from developing countries, in particular from emerging Asia, has been resilient. Other factors, such as the weak United States dollar, activities of financial investors in commodity futures markets and expectations regarding economic growth, also contributed to the rise in oil prices.

23. In June 2011, after OPEC failed to reach an agreement on increasing oil output, the member States of the International Energy Agency (IEA) agreed to release 2 mb/d of oil from their emergency stocks over an initial period of 30 days in order to: (a) offset the supply disruptions in the Libyan Arab Jamahiriya and the seasonal increase in demand, until planned additional oil from major producing countries had reached global markets and (b) boost economic recovery. The markets responded promptly with Brent and Nymex West Texas Intermediate (WTI) crude oil futures prices dipping 6.1 per cent and 4.6 per cent, respectively.

24. Excessive oil market volatility has the potential to inhibit demand and reduce the pace of global economic recovery. Higher oil prices could also lead to significant shifts in wealth distribution across countries. For net oil exporting countries, high prices can improve the current account, generating government revenues and boosting public spending. However, for net oil importing developing countries, rising oil and food prices have led to high inflation and an increased fiscal burden.

E. Natural gas

25. World consumption of natural gas contracted by 1.1 per cent in 2009 owing to the crisis.[9] In 2010, gas demand rebounded as a result of economic recovery and exceptionally cold weather in the northern hemisphere. In the United States, the world's leading gas producer, the price of natural gas peaked at US$ 456.57 per

[8] International Energy Agency, "Oil market report" (Paris, 16 June 2011).

[9] U.S. Energy Information Administration, "International Energy Outlook 2010" (Washington, D.C., U.S. Department of Energy, July 2010).

thousand cubic metres in June 2008 (figure VII). In 2010, despite its recovery, the price of natural gas averaged US$ 158, much lower than its 2007 and 2008 levels. The first five months of 2011 saw the gas price fluctuate within the range of US$ 143-US$ 162.

26. The role of natural gas in any future energy mix will be determined by market fundamentals. On the supply side, since 2000, the development of "unconventional" sources of natural gas, yielding, for example, shale gas, tight gas and coal-bed methane (CBM), has taken off. The so-called *shale gas revolution* has dramatically increased the supply of natural gas in the United States market, kept gas prices at a low level and altered liquefied natural gas (LNG) trade patterns. According to IEA, unconventional gas now accounts for 60 per cent of marketed production in the United States. The growth of unconventional natural gas production in the United States and other countries such as Australia (with its production of CBM) will have a far-reaching impact on other regions of the world, in particular the emerging economies that are seeking diversified energy sources to meet their energy demand and sustain economic growth.

27. Demand will mainly be determined by global economic growth and the competitiveness of natural gas compared with other sources of energy in terms of price, environmental and safety impact. Other factors such as proximity to the source of supply, technological advances and government policies will also influence demand.

28. Natural gas is one of the cleanest fossil fuels, although it still lags behind renewable and nuclear energy in terms of carbon emissions. Nonetheless, its importance in the world energy mix is growing. For example, China's twelfth Five-year Plan (2011-2015) aims to increase the share of natural gas in its primary energy mix from 3.8 per cent in 2008 to 8.3 per cent.[10] The 2011 incident at the Fukushima nuclear plant in Japan has made some countries rethink their nuclear energy policies and switch to renewable energy and natural gas in order to satisfy future energy demand. For example, Germany has decided to close 17 nuclear plants and replace them with renewable energy and gas-fired power stations by 2022.[11] These policies will have significant implications for future global natural gas demand.

F. Coal

29. In 2008, coal accounted for 27 per cent of global primary energy supply,[12] and it remains the major fuel for electricity generation, although it faces increased competition from natural gas and renewable energies. For example, in EU, coal use has been declining since 1990.

30. The Asia-Pacific region has become a world centre for coal production, consumption and trade. Between 2009 and 2010, global coal production and consumption grew by 6.3 per cent and 7.6 per cent, respectively.[13] China and India

[10] International Energy Agency, *World Energy Outlook 2011* (Paris, 2011).

[11] "German energy plan seen as viable", *Financial Times*, 21 June 2011.

[12] International Energy Agency, "Key world energy statistics 2010" (Paris, 2010).

[13] "BP statistical review of world energy 2010: June 2011" (London, 2011). Estimates based on 1 million tons of oil equipment (Mtoe) data.

are among the top three coal-producing and -consuming countries in the world.[14] Australia is the world's main exporter of coal and Japan continues to be the world's largest coal importer.

31. During the 2002-2008 commodity boom, the monthly prices for Australia's thermal coal peaked in July 2008 (US$ 193 per metric ton) before falling to US$ 65 per metric ton in March 2009, owing to the global economic recession (figure VII). Supported by strong demand from China, the price of coal has increased since April 2009. Despite short-term volatility, the price continued its upward trend to reach a cyclical peak in January 2011. In 2010 and during the first quarter of 2011, coal prices averaged US$ 106 and US$ 135, respectively.

32. As global efforts to combat climate change intensify, the prospects for coal in the world market, in the medium term, would most likely depend on carbon emission reduction agreements and policies and the development of carbon dioxide (CO_2) capture and storage technologies.

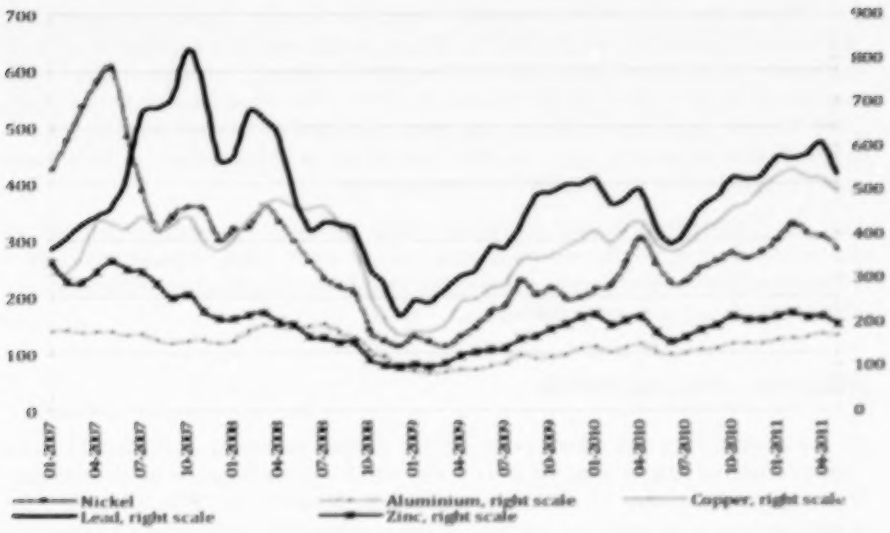
G. Minerals, ores and metals

33. Minerals, ores and metals price indices sharply increased in 2010-2011, with copper, lead and zinc driving the price rises, which were a response to the stronger-than-expected recovery in emerging economies. Notably, in 2009, Chinese base metals demand grew about 24 per cent, whereas consumption declined 13.5 per cent in the rest of the world. The upward trend in metal prices continued during 2010-2011 (figure VIII) owing to a combination of tightening supply and a strong demand from Asian countries and Brazil. Over the next few years, the shortage of investment in new mines, coupled with an already challenging situation in respect of upgrading mining capacity, is set to lead to generation of a further supply contraction. Thus, if demand continues to grow at the rates observed over recent years, metal prices could rise further in the medium term.

[14] Ibid.

Figure VIII
Price indices of non-ferrous metals, January 2007-May 2011

(2000 = 100)



Source: UNCTADstat.

34. From 2003 to 2008 Asia's demand for minerals ores and metals caused prices to rise to record highs; however, the onset of the financial crisis reversed demand for most of these commodities, which subsequently led to dramatic falls in prices. The decline in demand also raised global stock levels and contributed to reduced prices.

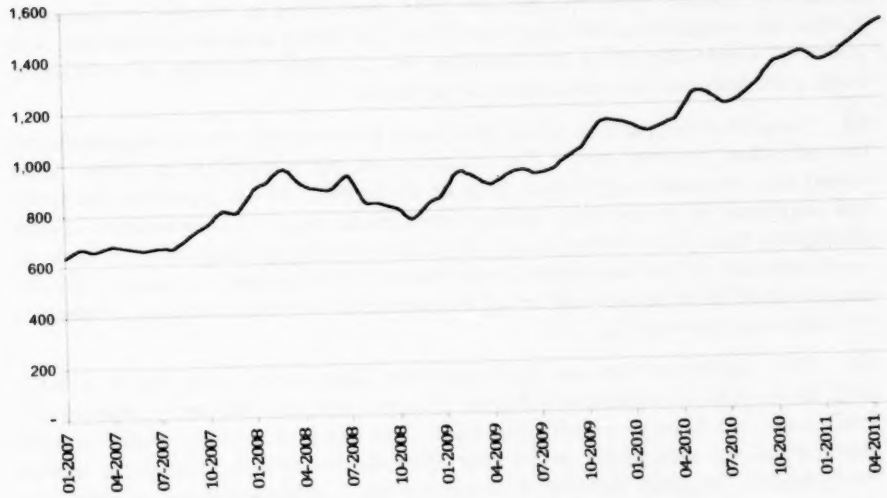
35. Since 2009, copper prices have been on an upward trajectory. In 2009, prices more than doubled as China sustained its demand. Prices continued to climb in 2010 as a result of tight supply owing to underinvestments in mine production. According to the International Copper Study Group, the expected annual refined copper production deficit (estimated at about 250,000 tons in 2010), is expected to rise to 377,000 tons in 2011. As regards trend demand growth, consumption levels are expected to rise rapidly, which could have a dramatic effect on prices if there is insufficient supply capacity available to meet this demand. Uncertainty in the market resulting from factors such as political disturbances in the region of the Middle East and North Africa, changes in trade and monetary policies, and the aftermath of the earthquake in Tohoku, Japan, could affect production deficits and influence prices.

36. Lead, zinc, nickel and tin prices fell in 2008, following a slump in demand triggered by the global recession, but recovered in 2009 and followed an upward trend in 2010 owing to the fast pace of growth in China's refined output. The increase in lead consumption reflected both a restocking phase and a rise in its use by the automotive sector. Zinc consumption increased by 16.3 per cent in 2010 but has grown relatively slowly in 2011. Tin prices rose on the back of strong demand in

Asia, with China, Japan, the Republic of Korea and Taiwan Province of China accounting for approximately 85 per cent of consumption from the region.

37. Gold is a traditional safe haven during times of uncertainty. In the aftermath of the financial crisis, demand for gold rose modestly as stock markets took a tumble. However, in 2009, gold prices had risen by 32 per cent because of the recession in Europe and the United States, and the strong demand from Asia, notably in China and India; prices rose again by 24 per cent in 2010, ending the year at a record high of $1,390 per ounce (figure IX). A variety of factors contributed to the price increase, including the falling dollar, cuts to interest rates, and rising inflation. In June 2011, gold prices set a new record of $1,528 per ounce as investors took refuge in gold, following the tentative recovery in both the United States and Europe and, in particular, given the continuing sovereign debt problems in the periphery of the Euro zone. Investors are also buying into stock exchange-traded funds (ETFs), which offer exposure to the gold market without imposing the necessity of buying the physical product. Uncertainty in dealing with the government debt crisis in Europe has also played a part in gold's reaching a new record price.

Figure IX
Gold prices, January 2007-May 2011
(dollars/troy ounce)



Source: UNCTADstat.

IV. Commodity price volatility: potential policy responses at the domestic and international levels

A. Policy responses to commodity price volatility

38. The present section focuses on the large recent fluctuations in commodity markets, the impact of price volatility on developing countries, and the potential policy responses at the domestic and international levels.

39. Commodity prices have shown considerable volatility over the past decade. The price boom between 2002 and 2008 was the most pronounced in several decades — in terms of magnitude, duration and breadth. Moreover, the price decline following the onset of the recent global crisis in mid-2008 stands out both for its sharpness and for the number of commodities affected. Since mid-2009, and especially since the summer of 2010, global commodity prices have been rising rapidly again (except for some temporary setbacks in the second quarter of 2011).

40. There are many explanations for the volatility in commodity markets, including the so-called financialization of commodities as an asset class. High prices across a broad range of commodities and the potential diversification benefits of a wide array of investment opportunities have drawn speculative investors (for example, hedge funds, and commodity index and exchange-traded funds) into commodity markets. Between 2003 and 2008, speculative investment in commodity indices was estimated to have increased from $15 billion to about $200 billion. The issues of commodity price development and the financialization of commodity trading are discussed in greater detail in the annex.

41. Long-term comparisons show that recent price volatility is not unprecedented for individual commodities.[15] For example, oil price volatility in 2008, while remarkable, remained well below its spike of the early 1970s. However, the speed and amplitude of recent price swings for a broad range of commodities clearly distinguish them from earlier ones.[16] More specifically, the magnitude of the most recent upswing of food and metals prices was above the historical average, while the magnitude of the price rebound for oil was similar to historical averages, although it was achieved more rapidly.

42. Price variations that are predictable (in other words, that follow a well-established trend or exhibit well-known seasonal patterns) are rarely problematic. Price variations become problematic when they cause uncertainty, either because they cannot be anticipated or because they do not reflect changes in market fundamentals. Volatility becomes a concern when it induces risk-averse behaviour that leads to inefficient investment decisions. When volatility becomes "excessive" — that is, when it causes disruptions that are beyond the management capacity of producers and consumers — it should be addressed by policy, including support mechanisms, at the national and international levels.

---

[15] O. Calvo-Gonzales, R. Shankar and R. Trezzi, "Are commodity prices more volatile now? A long-run perspective", World Bank Policy Research Working Paper, No. 5460 (Washington, D.C., World Bank, October 2010).

[16] J. Baffes and T. Haniotis, "Placing the 2006/08 commodity price boom into perspective", World Bank Policy Research Working Paper, No. 5371 (Washington, D.C., World Bank, July 2010).

43. High commodity price volatility, if not properly managed, can have negative implications for development. Volatile and uncertain revenue flows can complicate not only fiscal management, but also budgetary and long-term planning. Volatility could also undermine development efforts by discouraging investment, widening trade deficits and aggravating household poverty, particularly since commodity sectors generally constitute the major source of livelihoods for large sections of the population in low-income and least developed countries. Balance-of-trade fluctuations induced by commodity price volatility can also have profound negative effects on development by impacting real exchange rates, thereby increasing the cost of foreign borrowing and limiting the capacity to service foreign debt.

44. Many attempts have been made at the international and domestic levels to stem commodity price volatility and mitigate its impacts, with a view to assuring returns to producers that are considered "remunerative". Past strategies have included (a) supply management schemes; (b) income support programmes to protect commodity-dependent developing countries from declines in export earnings; (c) market-based risk management mechanisms; (d) revenue management schemes;[17] and (e) diversification and value-addition programmes.

B. Supply management schemes: international commodity agreements

45. Past attempts by the international development community to develop a viable international commodity policy that would address price volatility and stabilize incomes for producers were made within the framework of UNCTAD. An Integrated Programme for Commodities (IPC) was proposed in August 1974 and approved at the fourth session of UNCTAD in 1976. Subsequently, negotiations were launched to establish international commodity agreements (ICAs) for a basket of commodities. It was envisioned that those agreements would finance buffer stocks so as to reduce price fluctuations and stabilize prices at levels remunerative to producers. The Common Fund for Commodities was established as the financing facility.[18] However, the only new commodity agreement containing economic clauses that was negotiated within the context of the Integrated Programme for Commodities in UNCTAD was the International Rubber Agreement, while other agreements (for example, on tin and sugar) were discontinued.

46. Supply management schemes were also implemented by marketing boards in many developing countries. Those organizations performed a role in stabilizing prices via national stockpiles and buffer stock facilities, but were largely dismantled in the 1980s and 1990s under structural adjustment programmes.

47. Arguably, the world's most successful supply management scheme is OPEC. Its objective is to ensure the "stabilization of prices in international oil markets with due regard being given to the interests of the producing nations and to the necessity of securing a steady income to the producing countries".[19] To achieve this objective,

[17] IMF, "The role of fiscal institutions in managing oil revenue boom" (SM/07/88) (Washington D.C., March 2007).

[18] The agreement establishing the Common Fund for Commodities, which was adopted in 1981, entered into force only in 1989, with its first window designed to finance buffer stocks being suspended.

[19] See http://www.nccr-trade.org/publication/oil-supply-managment-practices-the-organization-of-petroleum-exporting-countries-opec-under-the-w/.

quotas are periodically adjusted to market conditions. Despite some problems of quota enforcement, OPEC supply management generally helped to stabilize world oil prices, thus increasing the predictability of producers' export earnings. Dialogue between suppliers and consumers has also been utilized to control supplies to the market, thereby providing the global oil-dependent economy with greater stability.

C. Income support programmes

48. Compensatory financing facilities, designed to compensate for shortfalls in income and short-term price shocks, have not fared any better than international commodity agreements, in part because, until early 2002, many commodities suffered from secular price declines. The best-known examples of compensatory finance facilities are (a) the Contingency and Compensatory Financing Facility (CCFF) of the International Monetary Fund (IMF) (1988), preceded by the Compensatory Financing Facility (CFF), which had commenced operation in 1963; and (b) the EU Stabilization of Export Earnings (STABEX) system[20] and the EU Vulnerability FLEX (V-FLEX) short-term financing instrument, which assists the most vulnerable members of the African, Caribbean and Pacific Group of States in coping with the impact of the global financial and economic crisis and in mitigating its social consequences.

49. The objective of the Contingency and Compensatory Financing Facility was to smooth the effects of a temporary exogenously caused shortfall in merchandise export receipts below the medium-term trend in a particular country. It sought to provide countries lacking either sufficient reserves or the capacity to borrow externally with the capacity to smooth the path of national consumption in the face of a temporary shock to export earnings. The eligibility requirements for access to the compensatory financing element of the Contingency and Compensatory Financing Facility include: (a) a temporary export shortfall and/or excess cereal import that is attributable to factors largely beyond the control of authorities; (b) a balance-of-payments problem; and (c) a willingness to cooperate with IMF in addressing the problem.

50. Income support programmes, while pursuing goals similar to those of compensatory mechanisms, provide protection against sharp drops in export earnings and in this regard, consider the commodity price aspect as well as the potential decline in yields. The United States, for instance, created the Risk Management Agency (RMA) in 1996 to administer Federal Crop Insurance Corporation (FCIC) programmes and other non-insurance related risk management schemes that help support domestic agriculture.[21] Programmes are generally based on the sale of crop insurance via licensed private contractual brokers, but FCIC ensures the backing by providing reinsurance facilities (that is to say, subsidized insurance).

51. More traditional crop insurance generally takes into account only yield risk (protecting against "physical" loss that may occur during the crop year); but it can be combined with price risk mitigation mechanisms so as to ensure full protection.

[20] Two other compensatory financing schemes are the EU System for Safeguarding and Developing Mineral Production (SYSMIN) and the Switzerland Compensatory Financing Programme.

[21] See http://www.rma.usda.gov/.

Only a few countries — such as South Africa, Ethiopia, Kenya and Malawi[22] — currently use crop insurance schemes; however, with climate change exacerbating this type of risk, the relevance of these schemes is likely to become increasingly important and to be hotly debated in the foreseeable future.[23] An initiative to develop such a risk-pooling scheme in Caribbean countries (for example, in Jamaica for coffee) is under consideration and may be backed by a Caribbean Catastrophe Risk Insurance Facility which currently does not cover agriculture.

D. Market-based risk management mechanisms

52. Since the 1990s — against the background of the limited progress made by both domestic and international price stabilization schemes in addressing the commodity problems of developing countries — attention has focused on the use of market-based mechanisms for managing commodity price risks. These are instruments designed to offset exposure to price risk through financial markets or other institutions. The relevant derivatives contracts are usually traded on international commodity exchanges in major financial centres (for example, London and New York). Technically, these mechanisms permit producers, or Governments of producing countries, to limit the risks arising from unanticipated price movements by passing them on to investors. Hedging instruments that are used range from the basic types such as forward contracts, futures and options, to complex combinations (for example, collars and over-the-counter tools, among others), with the instrument used depending on the end-user's strategy for shifting risk.

53. However, the use of these market-based instruments is not widespread in low-income developing countries because of their sophistication and size and the cost incurred in using them. Accordingly, interest is now focusing on the establishment of commodity exchanges in developing countries that can offer hedging opportunities adapted to the needs of domestic producers and traders. However, not all developing countries — especially not low-income commodity-dependent countries — have the necessary critical mass of professional traders/exporters and large commodity producers required to operate an exchange with viable and effective hedging possibilities. In any case, while futures markets may help to address problems related to price variability, they cannot address the issue of long-term declines in commodity prices and negative terms-of-trade trends for commodity-dependent countries.

54. Over the past decade, there has been political interest expressed by developing countries — for example, at the African Union Conference of Trade Ministers in 2005 — in using some of these mechanisms, such as commodity exchanges. A limited number of developing countries have the institutional sophistication and market and professional characteristics required to operate viable commodity exchanges. Capitalizing on the size of their domestic market, or their market share

[22] In 1995, the European Union established TARSIM, a management entity designed to provide, in partnership with a pool of insurance companies, a crop insurance facility (backed by government contributions that subsidize part of the insurance premium).

[23] K. Derviş, "Given that mitigating climate change requires investment, how much should we invest and when?", The Climate Change Challenge, UNU World Institute for Development Economics Research (UNU-WIDER) Annual Lecture 11.

in a commodity in which they have a leadership role, Malaysia and Brazil have succeeded in establishing commodity exchanges through private sector initiatives, with some Government regulatory oversight.

55. A few low-income commodity-dependent African countries have also established (or are contemplating establishing) commodity exchanges. For example, the Ethiopia Commodity Exchange started trading operations in coffee in April 2008. It has since launched trading operations with contracts for other commodities such as maize, wheat, processed and unprocessed haricot beans and sesame.

E. Revenue management

56. A number of regional initiatives in the developing world demonstrate political commitment to promoting transparency and good governance in the management of revenues. In Africa, major initiatives include the African Peer Review Mechanism (APRM) of the New Partnership for Africa's Development (NEPAD).[24] In the Asia-Pacific region, important transparency and anti-corruption initiatives have been promoted by the Asian Development Bank (for example, the Asian Development Bank/OECD Anti-Corruption Initiative for Asia and the Pacific) and the Asia-Pacific Economic Cooperation (APEC) (Government Procurement Experts' Group and the Anti-Corruption and Transparency Task Force). In Latin America, the Inter-American Convention against Corruption,[25] negotiated under the umbrella of the Organization of American States, represents a leading example of regional action in the developing world. Political commitments to deny safe haven to corrupt officials and those who corrupt them have also been taken up by the Organization of American States and the APEC Forum.

57. At the national level, various revenue management schemes, such as stabilization funds, have also been designed and implemented to smooth fluctuations in revenues associated with commodity price variability over a time-horizon, and thereby reduce the severe disruptions that those fluctuations could introduce into macroeconomic planning, including critical expenditure.

Stabilization funds

58. Price stabilization funds have been established and operated by several commodity-dependent developing countries to help reduce the fluctuations in budgetary revenues. The funds accumulate revenue above a reference value during the boom periods and allow for transfers to be made to the budget or the economy during the bust periods. The aim is to smooth spending over the boom-bust cycle and avert sudden changes in spending, for example, on capital expenditure, and financing of public services, such as health, education and basic infrastructure, which could have severe consequences for budgetary discipline. Commodity-based sovereign wealth fund (SWF) assets owned by developing and emerging economies are estimated at US$ 1.9 trillion.[26]

[24] A/57/304, annex.

[25] See document E/1996/99.

[26] Sovereign Wealth Fund Institute (see http://www.swfinstitute.org/fund-rankings/).

59. Fiscal stabilization funds have been used by a number of commodity exporting countries for some time and have been a subject of interest for many developing countries in this era of increased volatility and uncertainty in respect of revenues.

60. Developing-country experience of stabilization funds has shown that a strong institutional framework, transparency and accountability are essential in making them work effectively. An inclusive multi-stakeholder approach, such as the Extractive Industries Transparency Initiative,[27] involving the private sector and civil society organizations, has helped in promoting transparency, accountability and governance in the use of those funds in some countries. These initiatives have also served to uncover financial irregularities which can contribute to the demise of the funds. Nevertheless, the ultimate strength of these multi-stakeholder initiatives lies in the credibility and effectiveness of the process, which in turn hinges on stringent reporting and auditing standards, and an external validation process with detailed templates and timescales.

61. These aspects make implementation technically complex and costly, and raise capacity constraints in several countries. Furthermore, multi-stakeholder initiatives establish accountability mechanisms within complex collaborative networks that enhance the participatory approach but may undermine local incentives to strengthen domestic (parliamentary) institutions.[28] A key issue is how to establish a virtuous circle whereby multi-stakeholder dialogue feeds into and strengthens domestic political processes.

F. Diversification and value-addition

62. The long-term effects of commodity price instability are greater for commodity-dependent countries. Thus, in the long run, reducing commodity dependence can contribute to indirectly addressing price volatility. Several diversification measures exist — for example, vertical integration into products and processes that capture a higher proportion of the value chain, and diversification into other sectors.

63. However, many factors can impede diversification including: (a) structural barriers in international trade (tariff and standards escalation); (b) scarce resources for investing in the sector, which in turn can be affected by commodity price volatility; (c) weak infrastructure, particularly as regards both cost and availability of transportation and storage; (d) lack of skills in producing and marketing alternative products; and (e) limited access to finance. Other constraints limiting the extent to which commodity-dependent developing countries diversify include social and political factors and macroeconomic factors such as debt burden and devaluation, which favour increasing the production and export of traditional products because it is easier to do so in the short to medium term.

64. Experience in some commodity-dependent developing countries (for example, Chile, Malaysia and Mauritius) shows that successful diversification can be

[27] See http://siteresources.worldbank.org/INTSDNET/Resources/5944695-1254248728084/IDA_EITI_2010.pdf.

[28] See Sam Jones, *Sub-Saharan Africa and the "Resource Curse": Limitations of the Conventional Wisdom*, DIIS Working Paper, No. 2008: 14 (Copenhagen, Danish Institute for International Studies, 14 May 2008), p. 34.

achieved through comprehensive partnerships with various commodity stakeholders, including international firms. Skills and technology transfers can be encouraged through incentives and joint ventures between local and international enterprises in the industry, in addition to policies that stipulate technology transfer in licensing agreements, in particular if they are systematically evaluated and in cases where organizations are rewarded for evidence of domestic capacity-building.

65. Governments have a critical role to play in enunciating the medium- and long-term objectives of a diversification strategy that is consonant with their overall development priorities, as well as in creating an auspicious environment for value-addition, including greater participation by local firms and producers, in higher levels of the value chain.

V. Concluding remarks

66. Commodity markets are inherently volatile, as demonstrated by the cycle of boom to bust to boom in 2007-2010. In fact the commodity price booms since 2002 have been underpinned by supply constraints due mainly to underinvestment over the past two decades in both extractives industries and agricultural commodities. This underscores the need for increased and sustained investment in commodities as a means of addressing price variability due to supply-and-demand imbalances. Volatile commodity markets create many challenges for developing countries, notably the net food importing countries and those heavily dependent on the export of just a narrow range of commodities, including many of the least developed countries. In the past, various international, regional and national support measures were designed and implemented with varying degrees of success. Further, recent developments in commodity markets have added new and complex dimensions to commodity price volatility. Innovative and coherent policies at national, regional and international levels are necessary to ensure that price volatility does not impede growth and development, and poverty eradication efforts.

67. In this regard, it might be useful for the international community to revisit the supply management schemes within the context of the new reality of commodity markets, while exploring the potential of these schemes for enhancing cooperation between producers and consumers and stabilizing markets. Various income support programmes can also play a role in addressing short-term price shocks and associated dramatic income fluctuations. However, procedures to access these programmes need to be simplified and accelerated so as to meet the urgent needs of eligible countries, including counter-cyclicality.

68. Market-based risk management instruments, such as futures, options and weather-index insurance, could reduce commodity price volatility and other risks when prerequisites are in place. However, tremendous efforts are needed to build institutional mechanisms, including the legal and regulatory framework, and to train potential clients in understanding and using these instruments. Furthermore, tighter regulation and greater transparency are important for reducing excessive price volatility in the "financialized" commodity markets. In order to avoid compromising the positive role of futures markets in providing liquidity and in price discovery, these instruments would have to target the activities of "non-commercial" market participants that are unrelated to market fundamentals.

69. The extreme vulnerability of mineral resource-endowed developing countries to Dutch disease and the resource curse would require prudent fiscal policies and management of the real exchange rate, with a view to reducing the dependency on external debts. Establishing institutional mechanisms, such as stabilization funds, will contribute to better macroeconomic management and to elimination of the pitfalls associated with the resource curse. Diversification will reduce the dependence on a limited number of commodities for revenue generation and improve, in the long term, the resilience of developing countries to commodity price shocks. However, the role of the State is critical in prioritizing diversification in the medium- and long-term development strategies, mobilizing resources and monitoring their implementation.

70. Episodes of extreme volatility in commodity markets and unexpected price swings have already prompted collaborative global action. Agriculture ministers from the Group of Twenty (G-20) leading economies, under the presidency of France, having met in Paris on 22 and 23 June 2011, released a ministerial declaration establishing an Action Plan on Food Price Volatility and Agriculture. The centrepiece of the five-point Action Plan is the Agricultural Market Information System (AMIS). The key objective of the System is to address high and volatile food prices through tougher regulation of speculative investments in commodity markets and government mandates on biofuels. Action at the international level aimed at increasing physical commodity markets transparency, improving the prevention and management of food crises and strengthening hedging instruments so as to provide better protection for the poorest populations, would reduce their vulnerability to excessive price volatility.

Annex

Commodity price development and the financialization of commodity trading

I. Introduction

1. Price volatility and the associated uncertainty in decision-making have always been a defining characteristic of commodity markets. This is because (a) medium- and longer-term commodity supply-and-demand conditions are subject to unknown factors, such as undetermined depletion rates of non-renewable resources and unknown effects of climate change on agricultural production; (b) inventory data, which provide valuable signals for short-term price expectations, suffer from significant measurement errors;[a] and (c) data on current global commodity supply-and-demand conditions are published with long time lags and are frequently revised. Therefore, even well-informed traders must formulate price expectations on the basis of partial and uncertain data.

2. To make matters worse, uncertainty in commodity markets is likely to have increased even further. In recent years, rapid industrialization, urbanization and changes in dietary habits in emerging economies, especially in Asia, have led to a growing demand for commodities. On the other hand, it has been difficult to accurately assess the impact of these signals on the short-term evolution of supply-and-demand relationships. This is due not only to uncertainties about the stability of rapid economic growth in emerging economies, but also, and especially, to the often wide gaps in the availability of data regarding these economies' commodity demand, supply and inventory situations.

3. These signals from the demand side have combined with growing doubts about the possibility of realizing technological breakthroughs anytime soon, and the ability to promptly overcome emerging technological obstacles to a commensurate increase in commodity supply, as had often been the case in the past. With regard to oil, for example, there has been a debate about whether the point of "peak oil" will be reached in the near future. With regard to agricultural commodities, news about slower growth of agricultural productivity has added to already growing concerns about land use, water shortages and, more generally, the link between agricultural production and climate change. Moreover, first-generation biofuels, which are based on food stocks, seem to have greatly increased the relevance of information on energy for trading in agricultural commodities, and vice versa. Low investment in production, infrastructure and research into ways of improving growth in commodity supply over the past few decades, when commodity prices were low, has been identified as a major cause of these supply constraints.

4. In such a situation of enhanced price uncertainty, the traditional roles of commodity derivatives markets in price discovery and risk management have gained

[a] G. Gorton, F. Hayashi and K. G. Rouwenhorst, "The fundamentals of commodity futures returns", *NBER Working Paper*, No. 13249 (Cambridge, Massachusetts, National Bureau of Economic Research, July 2007); and M. S. Khan, "The 2008 oil price 'bubble'", Policy Brief, No. PB09-19 (Washington, D.C., Peterson Institute for International Economics, August 2009).

increasing importance.[b] Commodity exchanges appropriately fulfil their roles in price discovery and risk transfer if market participants, in addition to using publicly available information, trade on the basis of (a) independent and individual information derived from an intimate knowledge of specific events relating to commodity markets and (b) of their own plans to supply or demand commodities.

II. Financialization of commodity trading

5. The increasing roles of financial motives, financial markets and financial actors in the operations of commodity markets — often referred to as the "financialization of commodity trading" — have increasingly put at risk the appropriate functioning of the price discovery and risk transfer functions of commodity derivatives markets. While financial investors have long been active on commodity markets, financial investment in commodities gained considerable attention following the bursting of the equity market bubble in 2000 and the range of financial participants in commodity derivatives markets and the kind of instruments they use have broadened considerably since the first half of the 2000s.

6. Investment in commodity indices has probably attracted the most attention over the past few years. Index investment tracks returns on weighted commodity baskets (for example, the Standard and Poor Goldman Sachs Commodity Index (S&P GSCI) and the Dow Jones-Union Bank of Switzerland Commodity Index (DJ-UBSCI)). These indices are composites of futures contracts on a broad range of commodities traded on commodity exchanges. According to index investment data from the United States Commodity Futures Trading Commission, the net investment position by index investors in the United States amounted to US$ 246 billion as of May 2011, down from a peak of US$ 256 billion in April 2011. The use of exchange-traded funds and notes (ETFs and ETNs) has rapidly expanded since about 2009.[c] According to data from Barclays Capital,[d] assets under management in exchange-traded products (ETPs) amounted to US$ 181 billion in June 2011, of which three quarters were in precious metals. The share of the value of commodity assets under management in global gross domestic product (GDP) increased more than fourfold during the period 2008-2010. Taken together, data on financial

[b] Commodity derivatives include futures and options contracts traded on organized exchanges, as well as forward, options and swaps contracts traded on over-the-counter (OTC) markets. A derivative is a financial asset, generally a contract between two or more parties, whose value is dependent upon or derived from one or more underlying assets, such as a commodity futures contract or a commodity index. Futures contracts are agreements to buy or sell a quantity of a commodity at a predetermined price. An option is a contract that confers the right, but does not impose the obligation, to buy or sell a futures contract at a specified price, at or before a future date. It provides protection against unfavourable price movements with, at the same time, retention of the possibility of profiting from higher prices, unlike futures. In addition, tailored products, such as swaps, are traded in the OTC market. Swaps lock in commodity prices over the medium to long term. For detailed reviews of commodity risk management instruments, see UNCTAD, "A survey of commodity risk management instruments" (document UNCTAD/COM/15/Rev.2 of 6 April 1998).

[c] ETFs are essentially mutual fund shares that trade on equity markets and track a designated commodity index. ETNs are debt securities where the issuer makes payouts based on the value of the underlying commodity index.

[d] Barclays Capital, "The Commodity Investor", Commodities Research (London, Barclays Bank PLC, 19 July 2011).

investment in commodity markets indicate that, in spite of some decline in the second half of 2008, the financialization of commodity markets had been increasing unabated until about May 2011 when some (perhaps temporary) decline set.[e]

7. Along with a wider range of instruments, investors and trading strategies have become more diverse. Perhaps most importantly, much of index investment appears to have moved away from taking long positions[f] only in commodity futures included in major indices (such as the S&P GSCI and the DJ-UBDCI) and concentrating on futures contracts with a relatively short maturity (1 to 3 months) towards taking positions that include contracts with a longer maturity (6 to 12 months) and focus on specific commodity categories (for example, energy) or even individual commodities. ETF sponsors may take long positions in commodity futures, but also techniques to track indices. An important recent development is that some ETFs, such as those on copper and aluminium, are backed by physical commodities rather than futures contracts. Money managers — such as hedge funds and institutional investors that adopt different trading strategies based on macroeconomic fundamentals, detailed commodity research, algorithmic trading or trend following, and general financial portfolio diversification considerations — typically take both long and short positions of a more short term oriented and actively managed character. More recently, some financial investors have become increasingly involved in algorithmic high-frequency trading (HFT).

8. Different rationales have motivated investing in commodities. As there is a historically positive correlation between commodity returns and inflation, investors perceive commodities that are easy to store, such as precious metals, as an effective inflation hedge. Institutional investors with a long-term investment horizon may have been attracted by diversification benefits for portfolio rebalancing. With reference to data for the period 1959-2004, it has been argued that "the risk premium on commodity futures is essentially the same as equities, (whereas) commodity futures returns are negatively correlated with equity returns and bond returns" and that "(t)he negative correlation between commodity futures and the other asset classes is due, in significant part, to different behaviour over the business cycle".[g] In addition, the limited range of investable assets in some emerging economies may have encouraged some investors to view commodity investment as a means to gain exposure to rapidly growing emerging market economies. Furthermore, investing in commodity futures contracts may provide a hedge against changes in the exchange rate of the dollar. Most commodities are traded in dollars and commodity prices in dollar terms tend to increase as the dollar depreciates. Finally, the recent low interest rate environment may have induced both individual and institutional investors to search for higher yields and choose riskier assets, such as commodities, when the return on safer assets, such as government bonds, is low.

---

[e] For further discussion, see *Trade and Development Report 2011* (United Nations publications, Sales No. E.11.II.D.3), chap. V, entitled "Financialized commodity markets: recent developments and policy issues".

[f] A long position is a market position that obligates the holder to take delivery (in other words, to buy a commodity), in contrast with a short position, which obligates the holder to make delivery (in other words, to sell a commodity).

[g] G. Gorton and K. G. Rouwenhorst, "Facts and fantasies about commodity futures", *NBER Working Paper*, No. 10595 (Cambridge, Massachusetts, National Bureau of Economic Research, March 2006), p. 1.

III. The price impact of financial investment in commodity markets

9. While the growing participation of investors in primary commodity markets is generally acknowledged, there has been considerable debate in recent years regarding whether this has raised the level and volatility of commodity prices. Some authors consider broad-based changes in fundamental supply-and-demand relationships as the sole drivers of recent commodity price development, and argue that the greater participation of financial investors in commodity markets has actually moderated price swings.[h] Others argue that the financialization of commodity markets tends to drive commodity prices away from levels justified by market fundamentals, with negative effects both on producers and on consumers.[i]

10. This ongoing debate centres around two related questions. First, how can financial investment affect physical market prices given that it is associated mostly with futures market activity and does not concern spot market transactions? Second, does financial investment alter demand for and supply of commodity futures in a way such as to move prices away from fundamentals and/or increase their volatility?

11. Regarding the first question, in many markets, price discovery at delivery is often the mechanism of last resort, whereas the bulk of transactions are executed at futures prices with reference to the price of nearby futures contracts (that is, contracts that are approaching maturity).[j] Regarding crude oil, the International Energy Agency describes how common trading practices cause the futures market to determine the price at which physical delivery occurs.[k] Moreover, while financial investors may not hold physical inventories themselves, their investments bid up the prices of futures contracts, which in turn provides an incentive for others to hold inventories.

12. The observation that no such accumulation of inventories occurred during the commodity price hike of 2006-2008 relates to a second argument, one introduced by Paul Krugman with regard to oil prices.[l] According to Krugman, speculative activity that drives prices above fundamental equilibrium levels will cause market imbalances and excess supply, which must result eventually in inventory accumulation. This reasoning would suggest that, since reported oil inventories did not increase, speculation cannot have played a role in causing oil prices to rise in 2008. However, others argue that data on oil inventories are notoriously poor.[m] Data on oil inventories are not reported by most non-OECD countries, which account for almost half of world demand for crude oil and include very large consumers such as China, nor is the data on oil stored in tankers, thus distorting the inventory data

[h] See, for example, S. H. Irwin and D. R. Sanders, "The impact of index and swap funds on commodity futures markets: preliminary results", OECD Food, Agriculture and Fisheries Working Paper, No. 27 (Paris, 2010).

[i] See, for example, C. L. Gilbert, "Speculative influences on commodity futures prices 2006-2008", United Nations Conference on Trade and Development Discussion Paper No. 197 (Geneva, March 2010).

[j] C. L. Gilbert, "How to understand high food prices", *Journal of Agricultural Economics*, vol. 61, No. 2 (2010), p. 409.

[k] International Energy Agency, *Medium-Term Oil Market Report* (Paris, OECD/IEA, 2009), p. 107.

[l] Paul Krugman, "The oil nonbubble", *New York Times*, 12 May 2008.

[m] M. S. Khan, "The 2008 oil price 'bubble'", p. 5 (see footnote a).

reported by OECD countries. Hence, no strong inferences can be drawn from such data. More fundamentally, Krugman's argument may take time to play out. Rising demand for futures contracts tends to cause a price increase in long-dated futures contracts, which in turn will provide an incentive to accumulate inventories; but given the very low short-run price elasticity of commodity supply, the short-term inventory supply curve is close to vertical. As a result, only an increase in spot prices can meet the increase in demand. Over time, production and consumption will respond to the higher price, inventories will gradually accumulate and prices will decline. In the interim, however, a commodity price bubble may well occur."

13. Third, spot and futures markets are linked through arbitrage; and a growing presence of financial intermediaries in some physical markets, as well as of some physical traders in financial transactions, is likely to have strengthened this linkage. For example, according to media reports, important financial institutions have come to invest in storage facilities, while large trading houses appear to make speculative bets on commodity prices.[o]

14. Regarding the second question, it should be noted that speculation is an indispensable element of derivatives markets, as speculators are the counterparties that producers and consumers need to offset their positions. In this sense, greater participation by financial investors in commodity futures markets can bring important economic benefits by making markets deeper and helping to accommodate the hedging needs of commercial users and reduce their hedging costs. Financial investors can also promote the liquidity of markets for longer-term futures contracts, facilitating risk management and long-term planning of commodity producers and consumers.

15. On the other hand, the extent to which the growing participation of financial investors actually provides these benefits very much depends on whether their position-taking actually follows developments in commodity market fundamentals and on whether they contribute to the diversity of opinions and thereby increase market liquidity. It is therefore important to note that the greater participation of financial investors may actually have caused commodity markets to follow more the logic of financial markets than that of a typical goods market.[p] In the latter, price discovery is based on information derived from a multitude of independent agents who act according to their own individual preferences. In typical goods markets, profit opportunities arise from individual pioneering action based on the private and circumstantial information of market participants.

16. By contrast, in financial markets, especially those for assets that fall in the same broad risk category (such as equities, emerging-market currencies and, recently, commodities), price discovery is based on information related to a few commonly observable events, or even on mathematical models that mainly use past — rather than only current — information for making price forecasts. In such markets, the most profitable behaviour often entails following the trend for some

[n] C. L. Gilbert, "How to understand high food prices", p. 408.

[o] J. Blas and J. Farchy, "Glencore reveals bet on grain price rise", *Financial Times*, 24 April 2011. Available from: http://www.ft.com/cms/s/0/aca76c5b-6ca5-11e0-a13b-00144feabdc0.html#axzz1KtsjV7En.

[p] Financial investors can also cause a weight-of-money effect. For further discussion, see UNCTAD, *Trade and Development Report 2009*, chap. II, entitled "The financialization of commodity markets". (United Nations publications, Sales No. E.09.II.D.16)

time and disinvesting just before the rest of the crowd does; on the other hand, acting against the majority, even if justified by accurate information about fundamentals, may result in large losses.

17. Herd behaviour can take various forms. It may be rooted in irrational tendencies and based on what may be called "pseudo-signals" for positions in commodity markets, such as information related to other asset markets and the use of inflexible trading strategies, including momentum investment or positive feedback strategies. Such strategies assume that past price developments carry information on future price movements, thereby giving rise, for example, to trend chasing. This will result in buying after prices rise and selling after prices fall, independent of any changes in fundamentals.

18. Herd behaviour can also be fully rational. Information-based herding, for example, consists in imitation in situations where traders believe that they can glean information by observing the behaviour of other agents. In other words, investors converge in their behaviour because they ignore their private information signals. Position-taking based only on other peoples' previous actions will lead to price changes without infusing any new information into the market. A sequence of such actions causes a snowballing effect which will eventually lead to self-sustaining asset price bubbles. Informational herding is most likely to occur in relatively opaque markets — in commodity trading, for example.

19. The persistence of price deviations from fundamental values caused by herding depends on the speed and efficiency of arbitrage. An arbitrage opportunity offers the possibility of earning a positive return at no risk. Such a possibility will arise if prices diverge from fundamental values or across markets on which identical assets are traded. However, widespread agreement exists that there are limits to arbitrage.[q] For example, rational arbitrageurs may not be able to correct mispricing, either because of risk aversion or because of capital constraints.[r]

20. What is more, it may not even be optimal for rational arbitrageurs to counter the position-taking of irrational investors that follow positive feedback strategies. Instead, they may want to buy and push up the price following some initial good news, thereby providing an incentive for feedback traders to aggressively buy the asset. This reaction by feedback traders will allow the rational arbitrageurs to sell their positions at a profit. However, in such cases profitable arbitrage also contributes to the movement of prices away from fundamentals and feeds short-term price bubbles.[s]

21. Identifying to what extent financial investment has affected the level and volatility of commodity prices is challenging owing to the limited transparency and level of disaggregation of existing data. Financial investment has probably not had a persistent impact. However, there is evidence to support the view that financial investors have affected price dynamics over short-time horizons. One such piece of evidence is based on the role of dramatic changes in financial positions in the oil

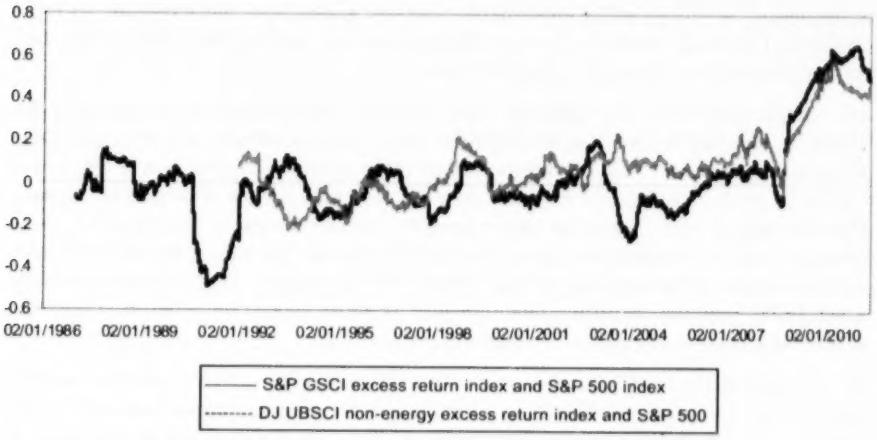
[q] D. Gromb and D. Vayanos, "Limits of arbitrage", *Annual Review of Financial Economics*, vol. 2, No. 1 (2010), pp. 251-275.

[r] A. Shleifer and R. W. Vishny, "The limits of arbitrage", *Journal of Finance*, vol. 52, No. 2 (1997), pp. 737-783.

[s] J. B. De Long and others, "Positive feedback investment strategies and destabilizing rational speculation", *Journal of Finance*, vol. 65, No. 2 (1990), pp. 379-395.

market between February and May 2011.[t] Equally important, recent evidence suggests that adding commodity futures to their portfolios no longer helps investors hedge against equity market risk. The process of deleveraging that began with the onset of the current crisis in mid-2008 and affected all asset markets resulted in a strongly positive correlation between the returns on commodity futures and those on equity investments (see figure).

Correlation between commodity and equity indexes, 1986-2011



Source: UNCTAD secretariat calculations, based on Bloomberg.

Note: The data reflect one-year rolling correlations of returns on the respective indexes, based on daily data.

22. From the evidence related to broad-based investment in commodities, as represented by the dark, solid line in the figure, it would seem that this positive correlation emerged only in the run-up to the current financial crisis, and that it became accentuated only in its aftermath. However, it is well known that the greatest benefits from investing in commodity futures are derived from diversifying across not only different commodity categories but also individual commodities.[u] Because the S&P GSCI is heavily weighted in energy, it is possible that the evolution of this correlation during the early 2000s, and especially its strongly negative numbers in 2003, was strongly influenced by events in energy markets, and especially by the war in Iraq in 2003. Thus, it is useful to examine the correlation between returns on non-energy commodity futures and equity investments. That correlation had already begun to rise in the early 2000s, well before the onset of the current crisis, as reflected in the figure.[v] This evidence supports earlier findings that the introduction of index trading led to a rise in the correlation among the individual

[t] For a detailed discussion, see *Trade and Development Report 2011* (see footnote c).

[u] P. Basu and W. T. Gavin, "What explains the growth in commodity derivatives?" *Federal Reserve Bank of St. Louis Review*, vol. 93, No. 1 (2011), pp. 37-48.

[v] Statistical tests indicate that the shift in the mean of the correlation following the bursting of the equity market bubble in 2000 is strongly significant even if the post-crisis period is excluded. The evidence is qualitatively similar, though numerically less strong, if the S&P GSCI non-energy index is used instead of the non-energy index of the DJ-UBSCI.

commodities included in an index, thus reducing or even eliminating the gains to diversification within individual index funds."

23. The positive correlation between returns on investment in commodity futures and that in equity reached a peak in late 2010-early 2011. This positive correlation is largely attributed to the second round of monetary easing initiated by the United States Federal Reserve in the third quarter of 2010 which is supposed to have made investors prefer riskier assets, such as commodities and equities, over safer ones, such as Government bonds. Based on this perception, it is widely believed that a tightening of the United States monetary stance could go a long way towards increasing the cost of funding that underlies financial investments and that has been seen as causing an inflation of asset prices across financial markets. However, the fact that there have been two shifts, rather than just one, in the correlation between returns on commodity investment and those on equity investment indicates that monetary easing may have only accentuated cross-market correlations. By the same token, a tightening of monetary conditions would merely eliminate the source of the second shift in the cross-market correlation, but it is unlikely to eliminate the financialization of commodity markets altogether and bring cross-market correlations back to where they were at the end of the 1990s.

24. A comparison of developments in commodity and equity prices over various business cycles shows that those prices used to move in opposite directions during the early upswings in previous cycles. In contrast, there has been a remarkable synchronization of equity price and commodity price movements in the most recent cycle. This increased synchronization is surprising because of the continued low level of capacity utilization in the wake of the "great recession" of 2008 and 2009. More important, the fact that monetary policy reacts to price pressure stemming from rising commodity prices, rather than to bottlenecks in industrial production, points to a worrying aspect of the impact of financialization which has so far been underestimated — namely, its capacity to inflict damage on the real economy as a result of sending the wrong signals for macroeconomic management.

---

[w] Basu and Gavin, "What explains the growth in commodity derivatives?", p. 46.